CORPORATE SAFETY MANUAL
2017
NOTE:

All amendments to Rules are printed in **BOLD** and *ITALIC* letters

“Four Steps to Safety”

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

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FOREWORD

For all of us in NB Power, safety is the top priority in everything we do. We must be mindful that there are dangers inherent in our business, and work safely at all times to prevent any injury or loss at work as well as at home.

This updated NB Power Safety Manual provides each of us with the best information available to ensure we do our jobs safely. Commitment to the rules outlined in this manual is a condition of employment whether acting as an employee, an employer, or a contractor with NB Power.

The NB Power Safety Manual is one component of our safety toolkit. When used together with protective equipment, engineering controls, operating procedures and safety training, this manual provides us a complete set of tools to help us be safe at work.

But the most important aspect of safety will always be ourselves. Beyond reliance on our knowledge, skills, training and experience, each of us must make a personal commitment to the principles outlined in our shared Safety Commitment document - Follow the Rules, Refuse Unsafe Work, Report Incidents, Lead by Example, and Have Courage - in order to protect ourselves, our co-workers and members of the public from any loss or harm. This is exactly why we have embraced the mindfulness concept and why 40-10-50 serves as a constant reminder for us to “Up the 10” when carrying out our daily work.

I encourage you to take the time to review this manual with your supervisor and co-workers to better understand your responsibilities, and to discuss your personal commitment to safety.

Your safety resolve and your past safety performance are both testaments to your safety commitment. I ask you to continue to lead by example, talk about safety and make it your primary responsibility regardless of the type of work you do. Nothing is more important than doing your job safely.

President and Chief Executive Officer

[Signature]

President and Chief Executive Officer
SAFETY
OUR SHARED COMMITMENT

NB Power and IBEW are working together for safety. Let’s share these commitments.

Together, we can prevent accidents and injuries.

WE WILL ALWAYS:

FOLLOW THE RULES
Avoid life-threatening hazards by following the rules. Always. Our workplace supports safety and expects that we take the time necessary to manage distractions.

PLAN SAFETY INTO OUR WORK
Prevent accidents by making sure safety is planned into every job we do. Before starting any task, spot the hazards and have a plan to eliminate or control them, to minimize risk.

SAY NO TO UNSAFE WORK
It’s your legal right to refuse unsafe work. All jobs are planned with safety in mind. If you aren’t sure, don’t guess. Stop the work and ask your supervisor.

REPORT SO WE CAN ALL GET BETTER
Report safety incidents and near misses right away. Sharing the facts ensures everyone is safer next time.

BE A LEADER IN SAFETY
Lead by example by working safely to prevent accidents and injuries. A safe workplace culture requires enough time, people, tools, and resources to do the job safely.

HAVE COURAGE
Speak up when you see potential dangers. Get involved if you believe someone is unfit for work or not trained for a task. Always encourage your co-workers to work safely.

Geeta Johnson
President and CEO
NB Power

Damen Murphy
Vice President, Corporate Services
and Civil Financial Officer
NB Power

Ross Galbraith
Business Manager
IBEW Local 37

SYRIS Heguy
President
IBEW Local 37

Énergie NB Power

OUR SAFETY CREED
No work is of such urgency or importance to justify not taking the necessary steps and time to ensure the safety of every member of the working force and the public.

October, 2016
NB POWER
HEALTH AND SAFETY POLICY

NB Power is committed to provide and require the highest practical standards of health and safety to protect employees, contractors and the general public.

NB Power acknowledges that healthy employees, working safely in an injury-free and healthy workplace is the cornerstone of the vision of People Performing at Their Best, which in turn enables each employee at the individual level to proudly serve its customers. Simply put, health and safety is a core value of NB Power’s business plans.

NB Power also expressly recognizes and promotes the understanding of safety as being inclusive of both physical and psychological health and safety, celebrating the contribution of each to the other. NB Power strives to make its workplace Totally Safe through competent employees who carry out their activities in a proper state of mind at all times; and extends its responsibilities in this regard to help educate the children of today as employees of tomorrow.

Management, employees and contractors will work together in an environment of respect in the implementation of this policy, and ensure that loss control management and human factors strategies are integrated in the day-to-day planning and execution of work.

Management, employees and contractors are accountable for performing work safely and in accordance with federal, provincial and municipal regulations and all established methods, standards and procedures.

Management, employees and contractors are responsible for identifying, communicating and correcting workplace hazards in order to protect themselves, their co-workers, and the public from harm. It is through the vigilance of all parties that NB Power fulfills its safety mandate: to create a working environment supportive of the individual wherein the performance of substandard acts and the existence of substandard conditions is simply not possible.

Employees will be involved in decisions that have an impact on their health and safety, and will be encouraged to participate in, and contribute to, the establishment of work practices conducive to the principles stated herein.

Health and safety performance will be measured and evaluated to ensure that continuous improvement opportunities are identified and implemented; addressing substandard acts and conditions as they are noted. Positive health and safety behavior and performance will be recognized.

President and Chief Executive Officer

NB Power is committed to provide the highest practical standards of health and safety for its employees and contractors and to protect the general public from potential hazards that relate to its operations and facilities.
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 his/her 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 his/her employees comply with the Act, the regulations, and any order made in accordance with the Act or the regulations;

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

e) ensure that at the place of employment the necessary systems of work, tools, equipment, machines, devices and materials are maintained in good condition and are of minimum risk to health and safety when used as directed by the supplier or in accordance with the directions supplied by the supplier;

f) acquaint employees with any hazard to be found at the place of employment in connection with the use, handling, storage, disposal and transport of any tool, equipment, machine, device or biological, chemical or physical agent;

g) provide such information, instruction, training and supervision as necessary to ensure employee health and safety;

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

i) operate with a committee, where such a committee has been established, or an elected health and safety representative, and with anyone responsible for the enforcement of the Act or the regulations.

CONTRACTOR

Every contractor or sub-contractor shall:

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

b) for every project site for which he/she is responsible take every reasonable precaution to ensure the health and safety of any person having access to such project site;

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

Every contracting employer:

a) who directs the activities of one or more employers involved in work at a place of employment shall ensure, as far as is reasonable practicable to do so, 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 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 Act, the regulations, and any order made in accordance with the Act or the regulations;

b) conduct himself/herself to ensure his/her 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, where one has been established, at his/her place of employment or with the Health & Safety representative where one has been elected at his/her place of employment.
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
a written statement by the employer which sets out in detail a procedure to ensure the health and safety of an employee in certain specific circumstances.

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

CONFINED SPACE
a space that is:
a) enclosed or partially enclosed,
b) not intended for continuous human occupancy,
c) has restricted access or egress and
d) contains or could contain physical hazards and/or a hazardous atmosphere.
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.

EMPLOYER
a) a person who employs one or more employees;
b) a manager, superintendent, supervisor, overseer or any person having authority over an employee; or
c) an agent of any person referred to in (a) or (b).

EMPLOYEE IN CHARGE
The intent is not for the Employee-In-Charge to assume the duties of the employer in total, but rather those responsibilities that impact safety “on site”. There are numerous levels with responsibilities for safety throughout the organization, and for which accountability rest outside the context of the Employee-In-Charge.

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.

ENCLOSED SPACE
a space that is enclosed or partially enclosed, not intended for continuous human occupancy, is not immediately hazardous due to contents, construction or atmosphere and has at least one of restricted access or egress, physical obstructions at the entrance point that could interfere with rescue operations or that has only one entrance/exit.
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.

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.

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

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.

SAFETY PERSON (CONFINED SPACE/ENCLOSED SPACE)

a competent person stationed outside of a Confined Space or Enclosed Space who monitors the authorized entrants inside.

SHALL

mandatory.

SHOULD

recommended.

SRL (SELF-RETRACTING LANYARD)

means a self-retracting lanyard which provides a tethering function while allowing vertical movement to the maximum working length of the device.

It is categorized in 3 types:

a) Type 1 – 1.5 to 3.0 m working length. If subjected to the force of a fall, it shall be retired from service.

b) Type 2 – greater than 3.0 m in length. It has a braking mechanism and can be repairable after being subjected to a fall force.

c) Type 3 – it will perform like a Type 2 but will have the ability to raise or lower a fall arrest victim to a safe level.

TAILBOARD CONFERENCE

a pre-job and post-job briefing lead by the employee in charge with all personnel involved, outlining the work to be done, methods to be used, hazards involved and safety rules which apply.
TRAVEL RESTRRAIN 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.

UNATTENDED
when the vehicle or equipment is out of eyesight.
SECTION 1 – SAFETY AWARENESS

1.1 GENERAL RULE

When risks arising out of, or in connection with the work assigned, are not identified in existing corporate safety rules, NB Power employees and contractors shall refer and adhere to existing 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 40-10-50

A core component of the NB Power Safety Strategy is 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 considering the environment of our work.

To increase the level of consciousness for the required task requires one to be mindful of the job requirements. Mindfulness for NB Power is the action of 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.

1.3 RESPONSIBILITY FOR SAFETY

Responsibility for safety lies with the employer, the contractor, the subcontractor, the employee in charge, and the employee.

Employees shall be 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 adequate personal protective equipment.

The employee in charge shall be responsible for seeing that every reasonable precaution is taken to protect employees, other persons and property from injury or damage.

The next level of supervision or management shall be responsible for holding the employee in charge accountable for the effective fulfillment of this responsibility, and such accountability shall extend up the line of authority of the Division.

1.4 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 and complete the appropriate reporting form.
2. Employees shall report all incidents to their immediate supervisor, as per the incident notification process, and follow up promptly by completing the appropriate reporting forms.

These forms shall be forwarded to Corporate Health & Safety.

3. Serious injuries, minor injuries with high potential for serious injury, and 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 Health and Safety Department as well as other appropriate NB Power departments and outside agencies in accordance with corporate policies and Health & Safety Standards.

4. Where an accident or fire occurs in connection with an electrical installation or a lightning protection system that results in the death of, or bodily injury to, a person or an animal, or damage to property, an owner or user of the electrical installation or lightning protection system, as the case may be, shall give notice thereof to the Chief Electrical Inspector within twenty-four hours after the accident and no person shall interfere with, disturb, destroy, carry away or alter any electrical installation, lightning protection system, wreckage, article or thing at the scene of or connected with the accident or fire until permission to do so is given by an inspector or except where it is necessary to the safety of any person or animal or to prevent further hazard.

5. Where an accident occurs in connection with an elevating device that results in the death of any person or in injuries that may result in the death of any person, the owner shall give notice thereof immediately after the accident by telephone or telegraph to the Chief Inspector and no person shall, except for the purpose of saving life or relieving human suffering, interfere with, disturb, destroy, carry away or alter any wreckage, article or thing at the scene of or connected with the accident until permission to do so is given by an inspector.

6. Where an explosion that causes damage to a boiler or pressure vessel occurs in connection with a boiler or pressure vessel, the owner or operator thereof shall immediately report it to the Chief Inspector by telephone or telegraph, and shall, within twenty-four hours after its occurrence, send a report thereon by mail to the Chief Inspector, stating the exact place at which the explosion occurred, the number of persons, if any, killed or injured thereby and any other information required by the regulations.

7. Where a gas accident or incident occurs, the supplier of gas to the installation shall immediately report it to the Chief Inspector by telephone or telegraph and shall, within twenty-four hours, send a written report to the Chief Inspector.

8. No person shall interfere with any equipment in, on or about the place where an accident or incident has occurred, except in so far as may be necessary for the purpose of preventing death or injury or protecting property, without the approval of a boiler inspector.
9. WorkSafeNB shall be notified:
   a. A loss of consciousness
   b. Amputations
   c. Fractures (other than fingers and toes)
   d. Burns requiring medical attention beyond first aid treatment
   e. Loss of vision in one or both eyes
   f. Deep lacerations requiring medical attention beyond first aid treatment
   g. Worker admission to a hospital as an in-patient
   h. Fatalities
   i. Any accidental explosion or exposure to a biological, chemical or physical agent, whether or not a person is injured
   j. Any catastrophic event or equipment failure that results, or could have resulted in an injury

Where 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 (Complete WorkSafeNB Form, report of an accidental exposure).

1.5 SERIOUS INCIDENT SCENE MANAGEMENT

When an Incident Occurs

1. Take Control of the Scene
   a) 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)
   a) Tend to the injured and initiate appropriate emergency response (911).
   b) Share details of the mechanism of injury with first responders (EMT’s, Ambulance Attendance, etc.) to aid in immediate treatment.

3. Make Appropriate Notifications
   a) Initiate additional notifications as per the incident notification process.

4. Preserve Evidence
   a) Cordon off the site with the help of Police or other Emergency Responders where available.
   b) 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.
5. Identify Sources of Evidence
   a) Make notes of the events while they are fresh in your mind. Sometimes the smallest detail is of great importance to investigators in determining causal factors.

6. Completion of the Job
   a) Subsequent to the investigators completing their on-site work, the original job that was underway at the time of the incident should be finished, or brought to a logical stage of completion by NB Power personnel not involved with the incident.
   b) This should be done not only to facilitate the interview process in a timely manner, but in recognition that those directly involved may not be in an appropriate psychological state to devote their full attention to the performance of complex tasks.
   c) No further work should commence without a detailed documented tailboard conference to ensure that all hazards have been identified and addressed.

7. If an employee sustains an injury or suffers an illness which requires prompt medical attention, other than on site first aid, arrangements for medical attention and appropriate transportation shall be made immediately.

References
1. NB Power Corporate H&S Policy
2. Corporate H&S Standard - VIII-I Incident Reporting
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

1.6 CANADIAN ENVIRONMENTAL PROTECTION ACT AND NB CLEAN ENVIRONMENT ACT

NB Power employees or contractors shall not knowingly discharge any harmful material into the environment. A partial list of harmful materials includes paint, solvents, oil (all kinds), acid and caustic.

Reference
1. Canadian Environmental Protection Act. Section 122
2. NB Clean Environment Act, Section 5.3 (1)

1.7 EMPLOYEE LIMITATIONS

1. Employees are responsible for informing their supervisor of any physical or other limitations that may reduce their ability to work safely.

2. If an employee in charge has reasonable grounds to suspect that an employee under his/her direction is mentally or physically unable to perform assigned tasks safely, he/she shall prohibit such employee from working until satisfactory medical evidence or other information is obtained to determine the employee’s capabilities.

Reference
NB Power Corporate Policy – HR-25 Alcohol and Drug Abuse
1.8 RIGHT TO REFUSE DANGEROUS WORK

1. An employee may refuse to do any act at his/her place of employment where he/she has reasonable grounds for believing that the act is likely to endanger his/her health or safety, that of any other employee or of the general public.

2. An employee who believes that an act is likely to endanger his/her health or safety, or any other employee’s or member of the public’s health or safety, shall immediately report his/her concern to his/her supervisor who shall promptly investigate the situation in the presence of the employee. If the supervisor fails to resolve the matter satisfactorily, the employee has the right to seek enforcement of the New Brunswick Occupational Health and Safety Act, Chapter O-0.2 titled “Right to Refuse”, Sections 19-23.

1.9 SAFETY COMMITTEES AND MEETINGS

1. Joint Health and Safety Committee Meetings
   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 place of employment with 5-19 employees shall establish a safety policy in respect of that place of employment which may include provision for a health and safety representative.

References
1. OHS Act Chapter O-0.2, Sections 14 to 16 and 17.1.
2. Corporate H&S Standard VI-3 - Joint Health and Safety Committees

2. Safety Meetings
   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 in 1.9.2(a) 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.
   c) Local Safety Meetings should be designed to promote safety and occupational health awareness to all staff and to promote public safety.
   d) Safety Meeting minutes shall be prepared and retained for 2 years. The names of those present, date of meeting and the location shall be on minutes.

References
1. Corporate H&S Standard VI-2 Safety Meetings

3. Tailboard Conference (pre-job briefing) Criteria
   a) All work shall be properly planned, taking into account personnel, approved work procedures, equipment, and the physical and environmental conditions at the work place. 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) Each location shall establish its own criteria for when tailboard conferences must be documented.

c) Tailboard conferences shall be carried out before the start of all jobs by the employee in charge.

d) Before beginning a job, all employees shall satisfy themselves that they understand the work to be done, know their part in the work as well as the part of other members of the crew, are familiar with the hazards involved and the safety rules which apply, are confident they can perform the task, and understand the method of carrying out the job and overcoming inherent hazards.

e) All employees involved with the job shall attend a tailboard conference. Failure to do so will result in employees not being permitted to work on the job unless they are either fully briefed on the work to be done or in the event of an emergency are permitted to work on the job on the authority of the employee in charge.

f) As unexpected circumstances arise, they shall be evaluated immediately. Additional briefing will be required to ensure each worker understands the appropriate action(s) to be taken.

References
1. NB Power Generation GS-83 - Tailboard Conference
2. OHS Act, Chapter O-0.2
3. Corporate H&S Standard III-11 - Tailboard Conference
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, etc.
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.

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 himself / herself to such hazard(s).
2. The employee will make a reasonable attempt to inform the customer of the hazard and shall promptly notify his/her supervisor of both his/ her concern and his/her decision not to expose himself/herself to the identified hazard(s).
3. Management 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).

2.3 EMERGENCY ACTIONS OF EMPLOYEES

1. In any emergency not provided for herein, employees shall act according to their best judgment. Under such circumstances, when quick action is necessary in order 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.
2. Any action taken in an emergency shall be promptly followed by a report to the employee in charge 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.
2. Hazardous materials (flammables, chemicals, explosives, etc.), shall be stored in accordance with local ordinances, applicable regulations, as well as any storage requirement as indicated on Safety Data Sheets (SDS).
3. 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.
4. 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, but always require specific identification of the materials, assessment of handling and transportation risks, and use of safe handling techniques.

5. 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. Corporate H&S Standard V-5 WHMIS and V-6 TDG
3. OHS Act, Regulation 92-106
4. Transportation of Dangerous Goods Act

2.5 HOUSEKEEPING

1. In the interests of safety, fire prevention and hygiene, all NB Power premises (including vehicles) shall be kept clean and orderly at all times by all employees.

2. Good housekeeping helps prevent accidents. Materials, tools and equipment shall be placed where they belong; aisles, walkways 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.

References
1. OHS Act, Regulation 91-191, PART II, Section 15
2. Corporate H&S Standard III-3 Housekeeping
2.6 LIFTING, PUSHING AND LOWERING

1. Supervisors shall ensure that all employees understand and apply safe lifting, lowering and pushing practices.

2. Employees shall not attempt to lift, lower or push loads beyond their personal capabilities as recommended in the CSA Ergonomics Standard.

3. Employees should lift heavy objects with their legs and NOT with their back which should be kept straight. They should hold the load close to the body when lifting.

4. Employees shall ensure that the load is not so large as to obstruct vision.

5. When two or more employees are lifting or pulling together, one worker shall give the instructions.

6. Before attempting to lift, employees shall check to see that the area is clear of tripping and slipping hazards.

Reference
1. OHS Act, Regulation 91-191- “Handling and Storage of Materials”, Section 52

2.7 OFFICE SAFETY

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

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

3. Ladders
   a) Employees shall use approved portable step-ladders when required to place or obtain objects in elevated locations.
   b) Ladders and platforms shall be examined before use; treads and ladder safety feet shall be provided with non-slip material.
   c) Boxes, chairs, etc., shall not be used in place of ladders.

4. Sharp Objects
   a) For the disposal of sharp objects (syringes or broken glass), a separate puncture-resistant container identifying the contents shall be used.
5. Building Evacuation
   a) 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.
   b) It is the responsibility of the employer to ensure that all employees are knowledgeable in fire protection and evacuation procedures.
   c) Materials and furniture shall not be placed in front of, or otherwise hinder access to, fire extinguishers, exits or pathways.
   d) Each employee shall note the location of fire extinguishers, exits and fire alarms.
   e) All employees shall evacuate the building when the alarm sounds.
   f) Each location shall have a written evacuation procedure, fire plan drawing and a documented annual evacuation drill.

6. Office Equipment
   a) Unsafe electrical cords, faulty electrical equipment or other equipment in a hazardous condition shall be repaired immediately or removed from service.
   b) 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
   a) Employees should have their work station set up as per the guidelines outlined in CSA Z412.
   b) Ergonomic Assessments are available and may be arranged through the employees’ supervisor.

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, Section 6.1, General Considerations in the Office Environment, Section 5.10.3, Lifting and Lowering, and 5.10.4, Pushing, Pulling and Carrying

2.8 PERSONAL CONDUCT
1. The use of intoxicating substances or non-medical drugs is strictly forbidden during working hours. 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 ensure at all times maximum safety to themselves, their fellow employees and the public.

References
1. OHS Act, Regulation 91-191, PART II, Section 12
2. NB Power Corporate Policy HR-25 Alcohol and Drug Abuse

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. 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 advised.

1. General

Various NB Power policies, work methods, standards and regulations prohibit an employee or a contractor’s employee from working alone. Some specific situations are identified below:

a) Working with electrical apparatus:
   I. 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.
   II. 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.

b) Setting or removing poles:
   I. A minimum of two qualified pole-setters shall be present at all times when setting or removing poles between any energized conductor exceeding 750 volts.

c) Chain Saw, Brush Saw and Clearing Saw
   I. NB Power shall ensure that an employee who operates a chain saw, brush saw or a clearing saw does not work alone.

2. Where not specifically identified in existing regulations, standards, policies, etc., and where risks arising out of or in connection with the work assigned are identified, NB Power shall establish a code of practice to ensure, so far as is reasonably practicable, the health and safety of an employee who works alone at any time at a place of
employment.

3.  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.

Reference
OHS Act, Regulation 92-133 Working Alone

2.10 FIRST AID

1.  Managers shall develop and maintain First Aid response capability in their work places, with enough first aid kits and trained first aid personnel to meet all the requirements of the Occupational Health & Safety Act and its 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 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)  Any Line Work
       All NB Power personnel and contractors engaged in line work shall hold a valid first aid certificate and be trained in artificial respiration and cardio-pulmonary resuscitation.

   b)  Confined Spaces
       Employees designated as safety persons for confined spaces shall hold a valid first aid certificate and be trained in artificial respiration and cardio-pulmonary resuscitation.

   c)  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.

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

References:
1.  OHS Act, Regulation 91-191
2.  New Brunswick Regulation 2004-130 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 also codes of practice developed by WorkSafeNB that an employer is required to adopt. There are a number of 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, etc. 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 health or safety 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
SECTION 3 – PERSONAL PROTECTION

3.1 GENERAL STATEMENT

1. Employees and contractors exposed to occupational hazards that are potentially injurious are required to wear the appropriate protective clothing. When necessary, personal protective equipment shall be made available and shall be used at all work locations.

2. An employee’s immediate supervisor will ensure proper clothing is used that is appropriate to the work being done and the hazard involved.

3. 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 job commencement.

4. High visibility clothing must be worn when working on or near road ways, on construction sites, working around heavy equipment as well as in the woods during hunting season or whenever the Supervisor, Foreman or Crew Lead deems it necessary for the safety of the workers.

Reference
1. OHS Act, Regulation 91-191, Part VII
2. GS068-Arc Flash Prevention and Protection
3. T&D Arc Flash Standard
4. Corporate H&S Standard III-12-Arc Flash

3.2 PROTECTIVE EQUIPMENT FOR CHAIN SAW, BRUSH SAW AND WOOD CHIPPER OPERATION

1. All NB Power employees and contractors, when operating a chain saw, a brush saw or a wood chipper, shall wear appropriate personal protective equipment while performing work for NB Power.

2. Eye and Face Protection for Brush Saw, Chainsaw Use and Wood Chipper Operation
   a) CSA approved safety glasses and/or a mesh screen shall be worn at all times while operating a chain saw or wood chipper.
   b) CSA approved safety glasses shall be worn at all times while operating a brush saw.

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” or a standard offering equivalent protection, having chain saw protection on the top and sides and with non-slip soles.

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 chain saw 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 worn at all times.

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

All NB Power employees or contractors shall wear NB Power approved headwear at all times 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:** Ear-muffs shall be maintained and replaced on a regular basis as per manufacturer’s recommendations.

8. **Clothing and Hand Protection for Wood Chipper Operation**

All NB Power employees or contractors performing work for NB Power shall wear loose-fitting mitts and snug-fitting clothing while feeding material into the chipper.

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

a) Eye, head and hearing protection as identified in previous rules 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
5. File “Correspondence with WorkSafeNB on Personal Protective Equipment for Chain Saw Use”
7. ANSI Z89.1 “American National Standard for Industrial Head Protection”
8. Foot Protection – Boot Covers - Memo from WorkSafeNB
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:
      i. meeting rooms
      ii. lunchrooms
      iii. office areas (control rooms)
      iv. driver and passenger area of vehicles
      v. 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) The use of photochromic lenses (which darken when exposed to sunlight) is prohibited.
   e) Safety glasses shall not have glass lenses.
   f) Safety glasses shall have side protection that is integrated or permanently affixed to the frame.
   g) Plastic lenses shall be specially treated to block the UV. Polycarbonate lens don’t need anti-UV treatment because it is an inherent property of the material.
   h) If there is a risk of facial injury, eye protection and a face shield shall be worn.

2. Protection from Mechanical Injuries
   In most circumstances, safety glasses will provide adequate protection; however, depending on the task, safety goggles or face shields, etc., 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.

3. Protection from Chemical Injuries
   Employees working with hazardous chemicals shall use suitable safety goggles, face shields, etc., for the job at hand. Work locations requiring such protection shall be identified by the local area manager, and shall be signposted. Eye wash stations shall be provided in or near these locations.

4. Protection from Non-ionizing Radiation
   When employees could be exposed to non-ionizing radiation, they shall wear special eye protection. The special eye protection shall be identified by the local area manager. 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. Corporate H&S Standard I-1 Eye Protection
3. CSA Standard Z94.3-07– Eye and Face Protection
4. GS068-Arc Flash Prevention and Protection
5. T&D Arc Flash Standard
6. Corporate H&S Standard III-12-Arc Flash

3.4 FOOT PROTECTION

1. Employees shall wear suitable footwear for the work being done.
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 shall also be electrically resistive. These boots shall meet CSA Z195-M92 and have the CSA green triangle as well as the CSA omega symbol.
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 Health & Safety Department. A request for wearing another type of safety footwear shall be done in writing to the Health & Safety Department.

References
1. OHS Act, Regulation 91-191, Part VII, Section 41(1)(2)
2. Corporate H&S Standard I-2 - Foot Protection
3. CSA Standard Z195-09 - Foot Protection
4. GS068-Arc Flash Prevention and Protection
5. T&D Arc Flash Standard
6. Corporate H&S Standard III-12-Arc Flash

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, etc., shall wear suitable gloves for hand protection.

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

3.6 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, etc.) and sharp objects from your hands or arms before wearing gloves - they will 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. 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. 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 conducting 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 at all voltages.
   e) 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. Corporate H&S Standard I-7 – Rubber Protective Equipment
3. Appendix 9.1
4. Standard Work Method
5. Substation, Terminal & Switching Station Access & Entry Memo 2009

3.7 HEAD PROTECTION

1. CSA safety headwear shall be worn during working hours by all employees and contractors engaged in line, plant, construction or switching operations (CSA approved or equivalent).

2. CSA approved head protection shall be worn by visitors and other persons visiting or working in areas where head protection is mandatory (CSA approved or equivalent).

3. The safety headwear shall be properly adjusted and secured to the head, with all components in place, in order to provide the designed protection.

4. 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.

5. 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 maintained in excellent condition at all times and any defective parts shall be replaced immediately.
6. 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.

7. In order 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.

8. Hardhats should be identified with the name of the employee and employer.

References
1. OHS Act, Regulation 91-191, Section 40(1)(2)
2. Corporate H&S Standard I-3 – Head Protection
4. ANSI Z89.1“ American National Standard for Industrial Head Protection”
5. GS068-Arc Flash Prevention and Protection
6. T&D Arc Flash Standard
7. Corporate H&S Standard III-12-Arc Flash

3.8 HEARING PROTECTION

1. Appropriate hearing protection shall be worn at all times where the exposure to noise exceeds 85 dBA, with the exception of employees operating vehicles or other equipment where the use of hearing protection is not permitted.

2. Where hearing protection may not be used, the exposure to noise shall be controlled by limiting the duration of exposure as indicated in the following table:

<table>
<thead>
<tr>
<th>Sound Level (dBA)</th>
<th>Maximum Unprotected Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>16 hours</td>
</tr>
<tr>
<td>85</td>
<td>8 hours</td>
</tr>
<tr>
<td>88</td>
<td>4 hours</td>
</tr>
<tr>
<td>91</td>
<td>2 hours</td>
</tr>
<tr>
<td>94</td>
<td>1 hour</td>
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<tr>
<td>97</td>
<td>30 minutes</td>
</tr>
<tr>
<td>100</td>
<td>15 minutes</td>
</tr>
<tr>
<td>103</td>
<td>7.5 minutes</td>
</tr>
<tr>
<td>106</td>
<td>4 minutes</td>
</tr>
<tr>
<td>109</td>
<td>2 minutes</td>
</tr>
<tr>
<td>112</td>
<td>1 minute</td>
</tr>
<tr>
<td>115</td>
<td>No unprotected exposure</td>
</tr>
</tbody>
</table>

References
1. Corporate H&S Standard I-5 – Noise and Hearing Protection
2. OHS Act, Regulation 91-191, PART V, Sections 29-33

3.9 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 person in charge.

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. Employees using a respirator that requires a tight seal between the face-piece and the skin shall be clean shaven and free of stubble where the respirator is in contact with the skin.

7. For detailed information on the types of respirators required for specific hazards, the employee in charge shall contact the Health and Safety Department.

Reference
1. OHS Act, Regulation 91-191, Part VII, Sections 45-47
2. Corporate H&S Standard I-6 – Respiratory Protection

3.10 CLOTHING PROTECTION FOR WELDING

1. An NB Power employee or contractor engaged in welding, cutting, burning or soldering operations shall wear flame resistant work clothing and 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
OHS Act, Regulation 91-191, Part XVIII, Section 276

3.11 BUCKET ESCAPE KIT

1. All employees required to work aloft in buckets, shall be trained in the 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, he/she shall take a descent device aloft as part of the standard equipment used when working from a bucket.

Reference
1. OHS Act, Regulation 91-191, Section 113
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
OHS Act, Regulation 91-191, Part VII, Section 38(1),(2)

4.2 BARRICADES AND SIGNS

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.

References
1. OHS Act, Regulation 91-191
2. NB Department of Transportation regulations
3. The Motor Vehicle Act (Consolidated to December 17, 2010)
4. Local ordinances, and as otherwise designated by the NB Power Standard Work Method.
5. Corporate H&S Standard III-9 - Barrier Tape

4.3 ELECTRICAL COVER UP / BARRIERS

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

1. All protective equipment shall be used, maintained, and stored as per the manufacturer’s instructions.

2. The employee in charge 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, etc., 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 conducting 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 employee in charge 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.

Reference
NB Power Standard Work Method

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. Climbers 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, etc. shall be equipped with double locking snaps/carabiner.

4.6 FALL PROTECTION

All NB Power employees or contractors shall use a fall protection system at all times while working in an aerial device or while working 3m or greater above a permanent safe level.

1. A fall protection “code of practice” is required for the workplace when:
   a) employees are working from a height of 7.5 m or more,
   b) when a safety monitor and work procedures are used for fall protection, when weatherproofing a roof, or
   c) a WorkSafeNB officer requires a code of practice to be written

   The specific requirements of the “code of practice” are covered in Section 50.2 of the General Regulation 91-191 of the Occupational Health and Safety Act.

2. The employee shall continually use a fall protection system when an employee works from:
   a) an unguarded work area that is
      I. 3 m or more above water or the nearest permanent safe level;
      II. above any surface or object that could cause injury to the employee upon contact; or
      III. above any open top tank, bin, hopper or vat.
   b) a work area that is 3 m or more above a permanent safe level and from which a person may fall if the work area tips or fails, or
   c) a work area where an officer has determined that it is necessary for safety reasons to use a fall protection system.

3. Workers shall be tied off when moving to, from, or between work locations where safe access is not provided. Fall protection is not required when going to and from work areas using a portable ladder.

4. Where continuous fall protection cannot be used because it creates additional risk, approved work procedures shall be established to guard against falls.

5. A fall arresting system shall consist of the following:
   a) a full body harness that is designed and rated by the manufacturer for the employee’s body type and adjusted to fit the employee;
   b) a self-retracting lanyard, an energy absorbing lanyard or a lanyard and energy absorber that is rated by the manufacturer for the employee.

6. If a fall-arresting system arrests a fall, an owner of a place of employment, an employer
and a contractor shall each ensure that all components, including connecting components of a fall-arresting system are:

a) removed from service and inspected by a competent person,

b) repaired to the designer’s or manufacturer’s specifications, or

c) destroyed when a defect is observed

7. An individual fall protection system shall:

a) be attached to a secure anchor capable of withstanding a 22 kN force or if under the direction of a competent person, four times the maximum load that may be generated in the fall arresting system; and

b) designed to limit the free fall distance to as short as possible but not to exceed 1.8 m or the shock level on the body to 8 kN

c) if using an energy absorbing lanyard is hazardous or impracticable, the fall-arresting system shall limit free falls to 1.2 m.

8. All users of fall protection equipment shall be properly trained.

9. No user modifications are allowed with fall protection equipment.

10. Each component of a personal fall protection system is inspected as follows to determine whether there are any defective or inadequate components:

a) by the employee prior to each use; and

b) periodically as recommended by the manufacturer’s specifications.

If the inspection reveals a defect or inadequacy, no one shall use the personal fall protection system or permit its use until the defect or inadequacy has been eliminated.

11. All fall protection equipment shall be maintained as per the manufacturer’s recommendations.

12. Elevating Work Platforms require fall protection to be worn at all times and attached to the anchorage(s) in accordance with the manufacturer’s instructions.

13. Elevating Work Platforms requires 100% tie off.

References
1. OHS Act, Regulation 91-191, PART VII, Sections 49 and 50 and 232

4.7 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.
4.8 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. In some cases continuous monitoring is required while the confined space is occupied. The safety or life of the workers entering a confined or enclosed 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. Corporate H&S Standard III-3 – Housekeeping - Orderly Premises
2. OHS Act, Regulation 91-191, Sections 262 – 272

4.9 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.

   a) extinguisher is present and mounted securely
   b) access and visibility are not obstructed
   c) operating instructions are legible and facing out
   d) safety seals and tamper indicators are present and intact
e) check fullness by weighing or “hefting”
f) check for obvious damage, corrosion, leakage, or clogged nozzle
g) pressure gauge reading or indicator is in operable range or position
h) condition of tires, wheels, carriage, hose and nozzle on wheeled units
i) WHMIS label is in place

2. Annually
All portable extinguishers shall be inspected annually by a certified inspector. 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. Six Year Maintenance
All refillable dry chemical extinguishers shall have an internal examination performed by an authorized service facility every six years. This test is performed either six years after the date of manufacture or six years after the last internal inspection. This inspection is also normally done prior to recharging if the extinguisher has been used.

The extinguisher will have a verification of service collar placed on the neck of unit at this time.

4. Hydrostatic Testing
Hydrostatic testing shall be performed every 5 years from the date of manufacture for:
   a) carbon dioxide extinguishers
   b) stored pressure water extinguishers
   c) dry chemical extinguishers with stainless steel shells

Hydrostatic testing shall be performed every 12 years for dry chemical extinguishers with non-stainless steel shells.

5. Transportation
Transportation of a number of fire extinguishers exceeding the operational requirements of the vehicle shall comply with the Transportation of Dangerous Goods Act and Regulations.

References
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 have been approved by NB Power, that are maintained in good working condition, and are used for the purposes for which they are designed.

5.2 TRAINING, COMPETENCE AND SAFE OPERATION

1. Management, supervisors and, where appropriate, employees shall take effective steps to inform all employees of any hazards associated with the use, handling, storage, disposal and transport of any tool, equipment, machine, or device that they may use in the course of their employment.

2. Only those employees who are “competent” to do so, 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 his/her 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

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 protective equipment.

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. By way of clarification with respect to “working alone”, if a chain saw, brush saw or clearing saw shall be used, two employees shall be present at the work site in order to render assistance if required.
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. 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 procedure 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

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/employee in charge.

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 shall be designed, manufactured and tested with due consideration for the limits, stresses and forces to which it will be subjected.

5. Tools having exposed moving parts that constitute a hazard to an employee shall be equipped with guards that are maintained in good working condition.

6. Portable grinders shall be equipped with guards and shall not be operated without them, unless suitable protection is provided for the operator, and for all personnel working in the vicinity.

7. Grinder disks shall match specifications of the grinder (ie: speed) and shall be properly selected for the task.

Reference
1. OHS Act, Regulation 91-191, Part 1 Sections 80-83
5.6 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. If the two feet of the portable ladder are resting on a slippery surface the proper pegs shall be used to prevent ladder from slipping or the base of the ladder shall be otherwise secured. If this is not practical, the ladder shall be held in place by another employee at all times when in use. Ensure the ladder is secured against movement.
   d) The bottom of the portable ladder shall be set one foot out for every four feet up.
   e) When extending the ladder to working height, both locking dogs on the moving section shall be engaged on a rung.
   f) Portable extension ladders shall have no more than three sections, and when extending a portable extension, maintain a minimum overlap as follows:
      I. Where the ladder is 11 m or less, the overlap shall be 1 m.
      II. Where the ladder exceeds 11 m and is 15 m or less, the overlap shall be 1.25 m.
      III. Where the ladder exceeds 15 m and is 22 m or less, the overlap shall be 1.5 m.
   g) 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.
   h) Portable ladders shall never be used as a horizontal work platform unless specifically designed for that purpose.
   i) Portable ladders shall not be placed in front of a door that opens toward the ladder unless the door is locked, blocked or guarded.
   j) Portable ladders shall be used by only one person at a time.
   k) **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 at all times. A handline shall be used for handling materials.
   l) **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.**
   m) Substitutes for portable ladders, such as boxes, chairs and crates, shall not be used.
   n) Defective ladders shall be taken out of service and either tagged for repair or
scraped.

o) Use the belt buckle rule: keep your belt buckle positioned between the side rails at all times, which will maintain your center of gravity.

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

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

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

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 positioned between the side rails at all times, 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.

Reference
OHS Act, Regulation 91-191, Parts X and XI, Sections 121-126

5.7 SCAFFOLDS AND WORK PLATFORMS

1. All scaffolds shall be erected according to specific written instructions supplied by the manufacturer/supplier.

2. Regulation 91-191 under the New Brunswick Occupational Health & Safety Act shall be adhered to.

3. 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.

4. 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.

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

   a) An unguarded work area that is
      
      I. 3 m or more above water or the nearest permanent safe level,
      II. Above any surface or object that could cause injury to the employee upon contact, or
      III. Above any open top tank, bin, hopper or vat

   b) A work area that is 3 m or more above a permanent safe level and from which a person may fall if the work area tips or fails.

   c) when a WorkSafeNB officer determines it necessary to use

Reference
1. OHS Act, Regulation 91-191, Part XI, Section 102(2) and Sections 127 to 145 inclusive
2. Corporate H&S Standard III-1 – Scaffolds

5.8 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

5.9 ELECTRIC POWER TOOLS

1. All electric power tools shall be Canadian Standards Association (CSA) or Underwriters Laboratories of Canada (ULC) approved.

2. Metal casing of portable electric tools shall be effectively grounded when connected to a power source unless the tool is an approved type.

3. A Ground Fault Circuit Interrupter (GFCI) shall be used when power tools are used outside or in wet conditions.

4. 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.

Reference
1. OHS Act, Regulation 91-191, Part 1X, Section 83, 84, 85 and 86

5.10 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 worn at all times.

8. Grinder disks shall match the specifications of the grinder (ie: speed) and shall be properly selected for the task.

Reference
1. OHS Act, Regulation 91-191, Part XVI Section 242 and 244

5.11 HOISTING AND RIGGING

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.

Reference
OHS Act, Regulation 91-191, Part XV

5.12 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. Chains shall not be spliced or joined by makeshift means such as open links, bolts, or wire. New links shall be inserted by a competent person.

4. Wire ropes or cables shall not be allowed to kink as this weakens them.

5. 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.

6. Knots in slings are prohibited.

Reference
1. OHS Act, Regulation 91-191, Part XV

5.13 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.

5.14 AIR-OPERATED TOOLS

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 by the use of 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. Corporate H&S Standard II-2 – Rollover Protective Equipment
3. Whip Check memo

5.15 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
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. All NB Power employees driving vehicles on NB Power business shall complete a defensive driving or professional driving improvement course (PDIC). These vehicles can include fleet, rentals or personal vehicles for work related activities.

4. All NB Power contractors when operating NB Power vehicles shall complete a defensive driving or professional driving improvement course (PDIC).

5. 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.

6. 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.

7. All vehicles, excluding ATV’s and passenger cars shall be equipped with back-up warning devices.

8. 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.

9. When operating any vehicle, the driver shall ensure that ventilation is provided at all times so that any gases leaking from the exhaust will not accumulate in the passenger compartment.

10. 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.
11. Headlights and tail lights shall always be on and free of obstructions when the vehicle is in motion to increase visibility in all weather conditions.

12. All vehicles equipped with either a personnel carrying device or an aerial lifting device shall have a vehicle log book (SCN #9651110Q). The operator shall be responsible for ensuring that all vehicles’ log books are current.

13. All new employees, including students and contractors, are required to provide a drivers abstract before being allowed to operate NB Power vehicles. These vehicles can include fleet, rentals or personal vehicle (for work related activities).

14. Seat belts shall be worn by all occupants while the vehicle is in motion.

15. All vehicles and vehicle compartments shall be locked while unattended in unsecured areas.

References
1. Motor Vehicle Act, Chapter 17, Section CARBON MONOXIDE (consolidated to December 17, 2010)
2. OHS Act, Regulation 91-191, Part XV
3. Corporate H&S Standard XI-1 – Fleet Standard
4. Corporate H&S Standard III-10 – Mobile Communication Devices

6.2 BACKING UP / PARKING

1. Whenever possible, the vehicle 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, he/she 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. Parking brakes shall be applied when parked.

6. Whenever practicable, NB Power vehicles shall be backed in so as to avoid backing later. When backing is unavoidable, and another person is available, this person shall be stationed at the rear of the vehicle to assist the driver in backing the vehicle safely.

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

9. 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)

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. Brakes and controls shall be tested prior to use. Equipment with faulty brakes and mechanical or electrical defects shall not be operated.

3. Forklifts shall not be fueled with the engine running.

4. Loaded or empty, forks should be carried as low as possible, but high enough to clear uneven surfaces.

5. 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.

6. 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.

7. On inclines, forklifts shall be driven with the load on the upgrade side of the driver, whether ascending or descending.

8. Seat belts are required to be used if equipped.

References
1. OHS Act, Regulation 91-191, PART XV, Section 216 and 217

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 at all times be in strict conformity with the Ministry of Transport Canada Regulations. The pilot’s authority shall not be challenged on matters of helicopter flight. His/her 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, at all times 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 on a daily basis. This inspection shall be logged.

14. Hoisting apparatus and aerial devices shall be inspected and tested by a competent person before it is put to use, once per year and additionally as identified by the manufacturer or NB Power standards. All inspections for hoisting apparatus two ton and above and for aerial devices shall be documented within the appropriate log book. 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.

15. Signals
   a) All hand signal rules shall be understood and observed by personnel at all times.
   b) Persons directing the operation shall be clearly visible at all times.
   c) Only one person shall give the signals.
   d) Signals shall be rehearsed and thoroughly understood before beginning a job.
   e) Stopping any signal means to “stop” and “hold”.
   f) A sharp cry from anyone means “stop” and “hold”. This is the only signal acceptable from anyone other than the person directing the work.
   g) Signals should be given deliberately and thoughtfully.

References
1. OHS Act, Regulation 91-191, PART XV, Section 207 to 215.
2. NB Power Fleet Directive 2004/01/12 – Outrigger Pad Size
3. 2007 memo from Harry MacLean, Daryl Daley and Martin Boucher

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. Vehicles not originally designed to carry passengers may be retrofitted to do so when used in conjunction with an approved code of practice.
4. Seat belts are required to be used for all off road vehicles equipped with rollover protection.

5. For transporting of personnel on Muskeg / Marooka type vehicles, follow the Code of Practice

6. Protective clothing shall be worn which shall be appropriate for any anticipated weather conditions.

7. When traveling alone with an off-road vehicle, the employee shall abide by the code of practice as per the working alone regulation.

8. First aid kits shall be carried on all off-road vehicles.

9. Tool kits, operating manuals, and minor service items such as belts, spark plugs, gas line antifreeze, etc., shall be carried on all off-road vehicles when used in isolated areas.

10. Additional fuel, when required, shall only be carried in approved containers with the appropriate WHMIS labels.

11. Only competent employees are allowed to operate, inspect and maintain off-road vehicles and the equipment mounted on them.

12. No person, other than the driver, shall ride on any tractor, bulldozer, or like machinery (Nodwell, Muskeg, Terreveh, etc.), unless the vehicle is designed to transport personnel.

References
1. Motor Vehicle Act, Chapter 17 (consolidated to December 17, 2010)
2. All-Terrain Vehicle Act
3. OHS Act, Regulation 92-133
4. Code of Practice for off road Muskeg type vehicles engaged in the transporting of personnel 1996/05/14

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 extremity 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.

Reference
1. Motor Vehicle Act, Chapter 17, Section 190, 191, Section 216, 255 (1) and 255 (2) (consolidated to December 17, 2010)
2. Standard Work Methods

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 (consolidated to December 17, 2010)

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 pot holes, 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 secured.
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 his/her 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 employee in charge 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 watercraft shall be equipped, operated, and maintained in accordance with the Federal Ministry of Transport Regulation.

4. Where the water temperature is below 10 degrees Celsius, flotation suits shall be worn by all employees.

5. If a worker working alone is exposed to risk of drowning, or if there are insufficient resources to provide a quick rescue, employees must wear a lifejacket.

6. 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.

7. When working on stationary objects adjoining water, the employee in charge 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.

8. 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.

9. 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.

10. 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.

11. 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. Corporate H&S Standard III-7 – Water Operations

6.11 WORK AREA PROTECTION

When work is being carried out on, or adjacent to, any public highway, municipal road or street and where an employee, contractor or the public’s safety may be endangered, the standard work method for work area protection shall apply.

References
1. OHS Act, Regulation 91-191, Part X, Sections 91, 92, 93 and 94
2. Standard Work Method on Work Area Protection

6.12 EMERGENCY EQUIPMENT

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 appropriate sized fire extinguishers as per Fleet Policy.

5. Containment Kit (Hydraulic)

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.

Reference
1. OHS Act, Regulation 91-191, Section 12(2)
2. Corporate Policy - Fleet Safety HR-37
3. Corporate H&S Standard – X1-1 Fleet Safety
4. Fleet Standard S-6
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 making adjustments, repairs, or maintenance on equipment that is in motion.

6.14 MOTOR VEHICLE ACCIDENT REPORTING

1. Where an NB Power-owned or leased vehicle is involved in an accident, the following procedures shall be followed as applicable:

2. Employees are to give necessary assistance to injured persons.

3. They shall notify the police and appropriate NB Power officials, as set out in Corporate Policies as per incident notification process.

4. 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.

5. The NB Power driver must note details of the accident, such as road conditions, signals or signs, location of vehicles, fixed objects, etc.

Reference
1. Corporate H&S Standard VIII-1 Incident Reporting
2. Corporate H&S Standard XI-1 Hours of Work

6.15 TRANSPORTATION OF DANGEROUS GOODS

1. The identification and transportation of dangerous goods shall be done in accordance to 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 Department of Environment.

2. Proof of training shall be on the person at all times 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
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. Corporate H&S Standard V-6 – TDG
5. Corporate H&S Standard XI-1 – Fleet Safety
SECTION 7 OPERATIONS AND MAINTENANCE

7.1 ARC FLASH

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.

References:
1. GS068 – Arc Flash Prevention and Protection
2. T&D Arc Flash Standard
3. Corporate H&S Standard III-12 - Arc Flash

7.2 POLES - GENERAL

1. At minimum, a qualified pole-setter 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 persons authorized by NB Power shall be allowed to hold/secure poles for other utilities and municipalities.

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

7.3 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, as a result 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 in order to avoid ground wires, telephone wires, etc., 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

7.4 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, in order 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.
7.5 BLASTING AND EXPLOSIVES

Only those employees who are trained, qualified, and authorized shall use or transport explosives.

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

7.6 KINDLING FIRES AND BURNING BRUSH

1. All required permits shall be obtained from the New Brunswick Department of the Environment and Local Government, Natural Resources, and any other local authority prior to burning brush. All applicable regulations of these authorities shall be followed throughout the course of the operation.

2. Gasoline or similar flammable liquids shall never be used to kindle a fire.

3. Burning shall be done with due regard to the surrounding area and under weather conditions which will not promote the spread of the fire, nor cause smoke to drift over populated areas.

4. The employee in charge shall ensure that no fire is left unattended or abandoned until it has been extinguished.

7.7 CHIPPERS

1. Only competent employees shall operate, repair, or service chippers, and they shall wear appropriate eye, head, hearing, and foot protection at all times while so engaged. Further, when feeding the chipper, loose fitting mitts and snug fitting clothing shall be worn.

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.

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.

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 “kill switch” of approved design and located at the infeed location.
7.8 CONFINED SPACES

9. Each work location shall prepare an inventory of potential confined spaces and the typical tasks to be performed in each.

10. Any work to be performed in a potential confined space shall have an assessment performed, as outlined in Health and Safety Standard III-2, to determine whether the work entry will be classed as a Confined or Enclosed Space.

11. All persons supervising, working in or planning work for Confined or Enclosed Spaces shall be trained in the required safe work practices as specified in Health and Safety Standard III-2.

12. No Confined or Enclosed Space will be entered until the atmosphere has been tested and determined to be safe.

References
1. Corporate H&S Standard III-2 – Confined Space Entry
2. OHS Act, Regulation 91-191, Part XVII.

7.9 WORKING ON OR ABOVE FLOOR GRATING

1. When working on or above floor grating, a canvas or other suitable covering shall be used to cover the grating in order 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.

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

7.10 PRESSURE HOSE

Employees shall use an approved hose rated for the purpose it will be used for. Air and water hoses shall not be used for steam. Suitable hand protection shall be worn when handling a steam hose under pressure.

7.11 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 secured at all times. 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 employee in charge 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. The insulation on energized conductors shall not be depended upon for protection. Such conductors shall be treated as bare wire and handled accordingly. Exceptions: Any cable with a grounded metallic sheath or shield.
5. Employees shall immediately report to the employee in charge 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

7.12 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, etc.), 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 the employee in charge has 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.

Reference
1. NB Power Standard Work Methods
7.13 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, etc.);
   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).
   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.

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

5. When removing grounds, the jumpers shall first be disconnected from the conductor or apparatus by means of an approved hotstick where clearances must be maintained as per the Minimum Approach Distances.

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

7.14 GROUNDING AND BONDING

1. Grounding and bonding is 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. When it has been determined that the apparatus is isolated, a potential check shall be
taken prior to installing grounding conductors.

5. **Grounding conductors shall be of sufficient size to carry the maximum current.**

6. **Equipment and apparatus such as guy wires, ground wires, etc. 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).**

7. **Approved temporary grounds shall be installed before any work is begun on any isolated lines or apparatus, as specified in Standard Operating Practices.**

8. **Only devices that are CSA approved or equivalent for the particular application shall be used to test for electrical potential.**

9. **All temporary safety grounds shall be tested and inspected every 2 years by the Test Lab in the Service Center.**

**References**

1. NB Power Standard Operating Practices

**7.15 SWITCH IDENTIFICATION**

1. Each Region and line service truck shall carry an operating map or diagram of its normal operational area.

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.

**7.16 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 (bypassed meters etc.)

**References**

1. OHS Act, Regulations 91-191
2. NB Power Transmission & Distribution Operating Regulations
3. NB Power Standard Work Methods

**7.17 WEATHER/ELECTRICAL STORMS**

1. When weather conditions make a job unduly hazardous, work shall be suspended immediately.
2. When working outdoors during an electrical storm, employees shall keep clear of trees, towers, poles, exposed ridges and peaks, wire fences, clotheslines, metal pipes, etc., and shall suspend any waterway operations.

3. 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 know an electrical storm is within the general vicinity of work in progress, they shall notify the crew concerned where possible.

7.18 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, G550

7.19 TREE TRIMMING

1. Unless specifically trained, chain saws shall not be used when aloft in a tree unless following a 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, a block and tackle shall be used to control the direction of the fall.

4. Felling operations, once started, shall be finished before the crew leaves for the night or lunch hour.

5. Buckets 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, the NB Power contractor is required to participate in and pass a course offered by NB Power or an approved equivalent course. After completion of the above course, the contractor, employee, tools, equipment, or tree will not violate the distances set out in Tables in Appendix 9.1.

7. 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.

References
1. OHS Act, Regulation 91-191, Part XXII
2. Appendix 9.1
SECTION 8 OCCUPATIONAL HEALTH

8.1 COLD STRESS

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

2. 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.

3. 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

8.2 HEAT STRESS

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

2. 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.

3. 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

8.3 ILLUMINATION

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. In an emergency situation when failure of the normal lighting system might constitute a danger to an employee’s health or safety, emergency lighting independent of the normal lighting source shall be available and tested monthly 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 work place 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 wear approved hearing protection at all times. 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. Corporate H&S Standard I-5 – Noise and Hearing Conservation

8.5 RADIATION

1. All work involving radiation, radiography or radioactive materials shall be done in accordance with the NB Power Radiation Protection Guidelines.

2. All radiography and x-ray fluorescence work shall comply with the terms and conditions of the operator’s license.

3. Work with radioactive materials or radiation shall be performed only by competent employees or under the direct and immediate supervision of a competent employee.

4. Any work with radioactive materials shall only be done with the knowledge and consent of the license holder, including source removal, relocation or repairs.

5. All locations using X-ray or radioactive sources shall be clearly identified.

Reference
1. NB Power Radiation Protection Regulations
2. Corporate H&S Standard III-9 - 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. All **hazardous materials or products containing hazardous material** shall have a proper WHMIS label as required by the regulations.

3. A valid **Safety Data Sheet (SDS), formerly referred to as Material Safety Data Sheets (MSDS)**, shall be obtained and kept immediately available for all **hazardous materials** at any site using the **hazardous material**.

4. The **SDS** shall be used to establish safe work practices for work in proximity to or involving the use of controlled products.

5. Metal flammable liquid storage cabinets must be grounded.

References
1. New Brunswick Regulation 88-221 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” as prepared by the Workplace Health, Safety and Compensation Commission dated March 19, 1992.

2. Locations with asbestos containing materials shall maintain an up to date inventory of the location(s) and type(s) of asbestos.

3. Materials suspected of containing asbestos above 1 percent 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 Type II or III 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. Training for Type I jobs may be done by a competent in-house trainer.

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 Type II or III asbestos work.

8. A knowledgeable person shall be assigned to all asbestos work to ensure the work is performed in accordance with the Code of Practice.
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. With the sole exception of compressed breathing air, compressed gas cylinders shall not be taken into confined spaces.

3. Cylinders shall be handled with care and not dropped, jarred or exposed to temperature extremes.

4. Cylinders shall have the valve protective cap or other approved protective device in place at all times, except when secured in position for actual use.

5. 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. Compressed gas cylinders, in use or in storage shall be secured by chain or metal strap to prevent them from falling or being knocked over.

6. Hydrogen, propane and other fuel gas cylinders shall not be stored inside any operating building. Separate, approved, storage buildings or shelters shall be used.

7. Electrical grounding of hydrogen cylinders and bulk storage facilities and distribution headers shall be maintained at all times. Purging of hydrogen cylinder, trailer tube or supply header valves prior to making hose or pipe connections is not permitted.

8. Hydrogen
   a) 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, known leaks, etc., may require the Hazardous Location to be expanded to ensure employee and plant safety.
   b) 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”.
   c) 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.
   d) 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.
   e) All equipment installed within a Hazardous Location must comply with installation rules as stated in the “Canadian Electrical Code - Section 18 - Hazardous Locations”

f) Maintenance of electrical devices and panels or junction boxes within Hazardous Locations shall comply with the Canadian Electrical Code and CSA Guideline.

g) Live line work in a Hazardous Location is not permitted.

h) The Hazardous Location qualification of any equipment within a Hazardous Location shall be maintained and not compromised.

9. Oxygen
   a) 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.

   b) 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.

10. 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.

11. Chlorine
    a) Chlorine containers shall be stored and properly secured in a cool place and protected from moisture.

    b) 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.

    c) Facilities using chlorine shall be equipped with an electronic alarm system to warn of chlorine leaks.

    d) Chlorine cylinders shall never be used or stored near flammable materials because of the risk of fire.

    e) If possible, during a leak, the cylinder shall be placed upright so only gas escapes.

    f) Ammonia may be used to detect leaks.

    g) Water should not be sprayed or poured on chlorine leaks.

12. 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.

13. Dry Breathable Air
    Proper pressure-reducing regulators must be used as cylinder pressures regularly

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 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 50°C (125°F).
   f) When repair work is being carried out in a building not under construction and occupied by people, the cylinder(s) shall be under the surveillance of the operator at all times.
   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”
SECTION 9 APPENDICES

### TABLE 1 - Minimum Approach Distances For Personnel & Equipment *†

<table>
<thead>
<tr>
<th>Voltage (Phase to Phase)</th>
<th>A‡</th>
<th>MAD Qualified Persons, Utility Arborists, Pole Setters</th>
<th>Cs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified Electrical Persons μ</td>
<td>ft</td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>Up to 750V</td>
<td>1ft</td>
<td>0.31m</td>
<td>2ft</td>
</tr>
<tr>
<td>750V to 15kV</td>
<td>2ft 1in</td>
<td>0.65m</td>
<td>3ft</td>
</tr>
<tr>
<td>16kV to 25kV</td>
<td>2ft 7in</td>
<td>0.77m</td>
<td>4ft</td>
</tr>
<tr>
<td>26kV to 69kV</td>
<td>3ft 3in</td>
<td>0.95m</td>
<td>5ft</td>
</tr>
<tr>
<td>70kV to 138kV</td>
<td>3ft 7in</td>
<td>1.09m</td>
<td>6ft</td>
</tr>
<tr>
<td>139kV to 230kV</td>
<td>5ft 3in</td>
<td>1.59m</td>
<td>7ft</td>
</tr>
<tr>
<td>231kV to 345kV</td>
<td>8ft 6in</td>
<td>2.59m</td>
<td>12ft</td>
</tr>
</tbody>
</table>

* 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 Lineman, 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
### TABLE 2 – Minimum Approach Distances For Personnel And Equipment* When Using Cover-Up Equipment/Barriers†

<table>
<thead>
<tr>
<th>Voltage (Phase to Phase)</th>
<th>A‡</th>
<th>Bð</th>
<th>Cs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft</td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td><strong>Up to 750V</strong></td>
<td>No Contact</td>
<td>No Contact</td>
<td>No Contact</td>
</tr>
<tr>
<td><strong>750V to 15kV</strong></td>
<td>2in</td>
<td>0.04m</td>
<td>3ft</td>
</tr>
<tr>
<td><strong>16kV to 25kV</strong></td>
<td>7in</td>
<td>0.16m</td>
<td>4ft</td>
</tr>
<tr>
<td><strong>26kV to 69kV</strong></td>
<td>1ft 3in</td>
<td>0.39m</td>
<td>5ft</td>
</tr>
<tr>
<td><strong>70kV to 138kV ‡‡</strong></td>
<td>2ft 7in</td>
<td>0.78m</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>139kV to 230kV ‡‡</strong></td>
<td>4ft 3in</td>
<td>1.28m</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>231kV to 345kV ‡‡</strong></td>
<td>7ft 6in</td>
<td>2.28m</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* 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.
### TABLE 3 – Minimum Approach Distances For Qualified Electrical Persons‡ When Performing Barehand Work†

<table>
<thead>
<tr>
<th>Nominal Voltage Phase to Phase</th>
<th>Phase to Phase</th>
<th>Phase to Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft</td>
<td>m</td>
</tr>
<tr>
<td>69kV</td>
<td>5ft</td>
<td>1.53m</td>
</tr>
<tr>
<td>138kV</td>
<td>7ft</td>
<td>2.14m</td>
</tr>
<tr>
<td>230kV</td>
<td>10ft</td>
<td>3.05m</td>
</tr>
<tr>
<td>345kV</td>
<td>14ft</td>
<td>4.27m</td>
</tr>
</tbody>
</table>

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

Revised January 2013
9-1  **TABLE 4 – Utility Arborist’s Working Distances** b,†

<table>
<thead>
<tr>
<th>Voltage (Phase to Phase)</th>
<th>A Utility Arborist’s Insulated Tool</th>
<th>Where Employee is Using an Uninsulated Object</th>
<th>Where Employee is Using an Insulated Object without an Insulated Aerial Device</th>
<th>Where Employee is Using an Insulated Object with an Insulated Aerial Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft</td>
<td>m</td>
<td>ft</td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>Up to 750V</td>
<td>6in</td>
<td>0.15m</td>
<td>1ft</td>
<td>0.3m</td>
</tr>
<tr>
<td>750V to 15kV</td>
<td>1ft</td>
<td>0.30m</td>
<td>2ft</td>
<td>0.6m</td>
</tr>
<tr>
<td>16kV to 25kV</td>
<td>1ft 6in</td>
<td>0.45m</td>
<td>2ft 6in</td>
<td>0.75m</td>
</tr>
<tr>
<td>26kV to 69kV</td>
<td>3ft 4in</td>
<td>0.90m</td>
<td>5ft</td>
<td>1.5m</td>
</tr>
<tr>
<td>70kV to 138kV</td>
<td>4ft</td>
<td>1.2m</td>
<td>6ft</td>
<td>1.8m</td>
</tr>
<tr>
<td>139kV to 230kV</td>
<td>5ft</td>
<td>1.5m</td>
<td>7ft</td>
<td>2.1m</td>
</tr>
<tr>
<td>231kV to 345kV</td>
<td>10ft</td>
<td>3.0m</td>
<td>12ft</td>
<td>3.7m</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Est. Wind Speed KM/H</th>
<th>Actual Temperature Reading ( °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10  4  -1  -6  -12  -17  -23  -28  -34  -40  -45  -51</td>
</tr>
<tr>
<td>calm</td>
<td>10  4  -1  -6  -12  -17  -23  -28  -34  -40  -45  -51</td>
</tr>
<tr>
<td>8</td>
<td>8   2  -2  -8  -14  -20  -26  -32  -38  -44  -49  -55</td>
</tr>
<tr>
<td>16</td>
<td>4   -2 -8  -15 -22  -27 -36  -43  -50  -57  -63  -70</td>
</tr>
<tr>
<td>32</td>
<td>0   -7 -15 -23 -31 -39 -47 -55  -63  -71  -78  -86</td>
</tr>
<tr>
<td>40</td>
<td>-1  -8 -17 -26 -33 -42 -50 -58  -66  -75  -83  -91</td>
</tr>
<tr>
<td>48</td>
<td>-2  -10 -18 -27 -36 -44 -52 -61  -70  -78  -87  -95</td>
</tr>
<tr>
<td>64</td>
<td>-3  -12 -21 -29 -38 -47 -57 -65  -73  -82  -91 -100</td>
</tr>
<tr>
<td>LITTLE DANGER</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In &lt; 1 hour with dry skin. A false sense of security is the greatest danger.</td>
</tr>
</tbody>
</table>

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

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

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.

<table>
<thead>
<tr>
<th>Humidex (°C)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 – 33</td>
<td>Heat Stress Alert</td>
</tr>
<tr>
<td></td>
<td>• alert crews and ensure heat stress information available</td>
</tr>
<tr>
<td></td>
<td>• provide water and encourage drinking at least 1 cup per hour</td>
</tr>
<tr>
<td>34 – 37</td>
<td>Heat Stress Warning</td>
</tr>
<tr>
<td></td>
<td>• alert staff and watch for signs of heat strain</td>
</tr>
<tr>
<td></td>
<td>• provide water and encourage drinking at least 2 cups per hour</td>
</tr>
<tr>
<td>38-39</td>
<td>• actively monitor for signs of heat strain and seek medical attention if required</td>
</tr>
<tr>
<td></td>
<td>• crews to rest 15 minutes each hour</td>
</tr>
<tr>
<td></td>
<td>(rest periods shall not be combined)</td>
</tr>
<tr>
<td></td>
<td>• drink 1 cup water every 20 minutes</td>
</tr>
<tr>
<td>40-42</td>
<td>• actively monitor for signs of heat strain and seek medical attention if required</td>
</tr>
<tr>
<td></td>
<td>• crews to rest 30 minutes each hour</td>
</tr>
<tr>
<td></td>
<td>(rest periods shall not be combined)</td>
</tr>
<tr>
<td></td>
<td>• drink 1 cup water every 20 minutes</td>
</tr>
<tr>
<td>43-44</td>
<td>• actively monitor for signs of heat strain</td>
</tr>
<tr>
<td></td>
<td>• 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</td>
</tr>
<tr>
<td></td>
<td>• 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</td>
</tr>
<tr>
<td>45 +</td>
<td>Heat Strain Danger</td>
</tr>
<tr>
<td></td>
<td>• all work to cease until humidex below 45 °C</td>
</tr>
<tr>
<td></td>
<td>• 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</td>
</tr>
</tbody>
</table>

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

## Humidex Table

| 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    |
| 48          |           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 47          |           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 47    |
| 46          |           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 46    |
| 45          | NEVER IGNORE ANYONE’S SYMPTOMS DESPITE YOUR MEASUREMENTS!!! |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 50    |
| 44          | Humidex   | Action |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 43          | 45+       | Stop work |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 42          | 43-44     | 75% relief |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 41          | 40-42     | 50% relief |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 40          | 38-39     | 25% relief |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 39          | 34-37     | warning & double water |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 38          | 30-33     | alert & water |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 37          | 25-29     | water as needed |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 36          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 35          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 34          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 33          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 32          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 31          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 30          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 29          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 28          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 27          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 26          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 25          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 24          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 23          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 22          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |
| 21          |           |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 49    |

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

<table>
<thead>
<tr>
<th>Permissible amount of work time in each hour of work.</th>
<th>TLV (WBGT in °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light Work</td>
</tr>
<tr>
<td>45 – 60 minutes</td>
<td>31.0</td>
</tr>
<tr>
<td>30 – 45 minutes</td>
<td>31.0</td>
</tr>
<tr>
<td>15 – 30 minutes</td>
<td>32.0</td>
</tr>
<tr>
<td>0 – 15 minutes</td>
<td>32.5</td>
</tr>
</tbody>
</table>

*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 TRADE QUALIFICATIONS
(For electrical systems outside the plant, from the high side unit disconnect on the unit Transformer)

<table>
<thead>
<tr>
<th>Trade</th>
<th>Hold A Work Permit</th>
<th>Hold A Hold Off (near)</th>
<th>Hold A Hold Off (on)</th>
<th>Carry Out-Switching (Table 1)</th>
<th>Repair Live Ground Grid</th>
<th>Install Personal Protection Bonds and Grounds</th>
<th>Minimum Approach-Distance Qualified</th>
<th>Education / Training / Certification (Table 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay Technicians</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>B,D,E,F,H</td>
<td></td>
</tr>
<tr>
<td>Plant Electricians</td>
<td>Hydro only</td>
<td></td>
<td>1 – 8</td>
<td></td>
<td>X</td>
<td>X</td>
<td>C-F,H,I</td>
<td></td>
</tr>
<tr>
<td>Telecommunications Technicians</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>B,I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission Electricians</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>C-F, I</td>
<td></td>
</tr>
<tr>
<td>Forestry Electricians</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power System Technicians</td>
<td>X</td>
<td>X</td>
<td>All</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>C-F,H</td>
<td></td>
</tr>
<tr>
<td>Power Plant Operators</td>
<td>Hydro only</td>
<td></td>
<td>1 - 3, 6 - 8</td>
<td></td>
<td>Hydro only</td>
<td></td>
<td>C-F,H,I</td>
<td></td>
</tr>
<tr>
<td>PSO / DSO</td>
<td>Training</td>
<td>Training</td>
<td>Training</td>
<td>1 – 3 and 7 – 8 training</td>
<td></td>
<td></td>
<td>C-F,H,I</td>
<td></td>
</tr>
<tr>
<td>Operating Lineperson / PLT / Certified</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>All</td>
<td>X</td>
<td>X</td>
<td>C-F,H</td>
<td></td>
</tr>
<tr>
<td>A Lineperson</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Other, Eng, Eng. Assist, Thermovision</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>operators, etc.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9-4  TRADE QUALIFICATIONS  
(For electrical systems outside the plant, from the high side unit disconnect on the unit Transformer)

### Table 1

<table>
<thead>
<tr>
<th>Types of Switching</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor operated disconnect</td>
<td>(1)</td>
</tr>
<tr>
<td>Gang switch</td>
<td>(2)</td>
</tr>
<tr>
<td>High voltage circuit breaker</td>
<td>(3)</td>
</tr>
<tr>
<td>Secondary PT fuses</td>
<td>(4)</td>
</tr>
<tr>
<td>Transformer tertiary ground cubicle, PT links, and station service power fuses</td>
<td>(5)</td>
</tr>
<tr>
<td>Rack in/out switchgear</td>
<td>(6)</td>
</tr>
<tr>
<td>Circuit switchers</td>
<td>(7)</td>
</tr>
<tr>
<td>Ground switches</td>
<td>(8)</td>
</tr>
<tr>
<td>Padmounted switches</td>
<td>(9)</td>
</tr>
<tr>
<td>Padmounted transformers (LB Elbows)</td>
<td>(10)</td>
</tr>
<tr>
<td>Hot stick operated O/H line</td>
<td>(11)</td>
</tr>
<tr>
<td>Reclosers (oil and vacuum)</td>
<td>(12)</td>
</tr>
<tr>
<td>Medium voltage power fuses (switchgear)</td>
<td>(13)</td>
</tr>
</tbody>
</table>

### Table 2

<table>
<thead>
<tr>
<th>Education / Training / Certification</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 year Forestry Tech + Certification</td>
<td>(A)</td>
</tr>
<tr>
<td>2 year Tech plus 2 year exposure or equivalent</td>
<td>(B)</td>
</tr>
<tr>
<td>Journeyman or Apprentice*</td>
<td>(C)</td>
</tr>
<tr>
<td>T&amp;D Operating Rules &amp; Regulations</td>
<td>(D)</td>
</tr>
<tr>
<td>Personal Protective Bonding &amp; Grounding</td>
<td>(E)</td>
</tr>
<tr>
<td>Personal Protective Equipment Training</td>
<td>(F)</td>
</tr>
<tr>
<td>Green Card</td>
<td>(G)</td>
</tr>
<tr>
<td>Practical Training on switching</td>
<td>(H)</td>
</tr>
<tr>
<td>Minimum Approach Distance</td>
<td>(I)</td>
</tr>
</tbody>
</table>

(In addition to the education and certification training identified above all tradespersons must believe themselves to be competent as defined by the Corporate Safety Manual.

*APPRENTICES - Must be accompanied or under the direction of Journeyman at all times
### 9-5 REVISION HISTORY

<table>
<thead>
<tr>
<th>Revision #</th>
<th>Section</th>
<th>Change</th>
</tr>
</thead>
</table>
| 2017 | All | • All references to “Corporate Safety FAQ’s” are deleted. They are no longer available publicly.  
• All references to “incident reporting flow chart” have been replaced with “incident reporting process”  
• Deleted “incident notification booklet”. It is no longer available. |
| Definition | “Qualified Person” revised. |
| 1.2 | New section added on Mindfulness. |
| 1.4.9 | Incident notification changes made as per legislation. |
| 1.9 | Replaced all references to “Loss Control Meetings” with “Safety Meetings”. |
| 2.4 | Replaced “Material Safety Data Sheets (MSDS)” with “Safety Data Sheets (SDS)” |
| 2.7.5.6 (f) | New section added on building evacuation procedures / annual drills. |
| 3.1.4 | New section added on high visibility clothing (when it must be worn). |
| 3.6 | Use of electrically rated rubber gloves – section revised. |
| 5.4.3 | New section added on guard ing requirements from WorkSafeNB. |
| 5.6 | Portable Ladders |
| 5.11.5 | Hoisting apparatus. Change inspected by a competent employee “once / month” to “prior to initial use and “annually”.
| 5.11.6 | Changed “inspected on a daily basis” to hoisting apparatus shall be inspected “prior to each use”. |
| 6.5.6 | Added: outrigger pads: For contractors, we will accept the manufacture’s outrigger pad requirements. |
| 6.5.7 | Added: Travel with a mobile elevating work platform or aerial lifts in an elevated position is not permitted. |
| 7.14.9 | New section added on requirements on testing / inspecting temporary safety grounds. |
| 8.6 | Wording change to reflect the new WHMIS rules |
| 8.8.5 | Added: Best practice requiring security of compressed gas cylinders |
Safety
La sécurité
takes you home
vous ramène chez vous

Énergie NB Power
Safety
Our Shared Commitment
IBEW FIOE 37