



Life Saving Rules Reference Document



<p>Rule 1: Maintain Your Limits of Approach</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> • To prevent contact with or flash over from exposed energized conductors or equipment. • A number of the serious incidents and fatalities have been related to violations of Limits of Approach (LOA). <p>Rationale for wording:</p> <ul style="list-style-type: none"> • Deliberate use of the word “<i>your</i>” is to indicate that the Limits of Approach are based on your qualification and valid authorization; you need to know the Limits of Approach you are authorized to work up to. 	
<p>Scope of Application</p>	
<p>This rule applies :</p> <ul style="list-style-type: none"> • To work around all exposed energized electrical equipment and conductors above 751 Volts. 	
<p>Special Conditions</p>	
<p>Special conditions apply if you are using:</p> <ul style="list-style-type: none"> • Rubber Glove Work procedures. • Bare Hand Work procedures. • Approved and tested live line tools and cover up. • An approved work method signed off by the Chief Safety, Health and Environment Officer. 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> • Treat high voltage conductors and electrical equipment as energized unless a Safety Protection Guarantee (SPG) or Lockout is in effect and Worker Protection Grounding/Bonding and/or Blocking has been applied. • The required distances you must maintain change for different voltages, worker qualifications and when using un-insulated equipment. • The Limits of Approach are not a physical barrier and can be easily broken. • Limits of Approach distances that you must maintain include worker positioning caused by: conductive tools, materials, equipment, or unplanned movements. • Assess your Limits of Approach for every job and re-assess if the job changes. 	

Key References		
Type and #	Location	Comments
SPR 400	Safety Practice Regulations	Safety Practice Regulations – Working near, or on, energized conductors and equipment
OSH Std. 201	200 Safety Engineering	Worker Qualifications for Limits of Approach Authorization
OSH Std. 602	600 Safety Equipment	Insulated Tools and Equipment
WSBC OHSR 19.24.1	Minimum approach distance when working close to exposed electrical equipment and conductors	
WSBC OHSR 19.24.2	Minimum clearance distance when passing under exposed electrical equipment and conductors	
Limits of Approach Training	Safety Training Resource Materials	Limits of Approach Training Materials
Live Line Manual	Work Methods	
For more information, contact:		
The Safety Hotline – 604-529-5540 (or local 75540). Safety@bchydro.com		

<p>Rule 2: Ensure there is a Safety Protection Guarantee or Lockout in place and check that it is appropriate for your work</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> To take responsibility for your own safety by asking appropriate questions and doing checks to ensure that the Safety Protection Guarantee (SPG) or Lockout will provide the appropriate isolation for your work. There have been incidents where a Safety Protection Guarantee (SPG) or Lockout was either: not obtained, not properly applied, or violated. <p>Rationale for Wording:</p> <ul style="list-style-type: none"> The use of the term “<i>check that it is appropriate for your work</i>” is deliberate: it is your responsibility to positively determine that the hazardous energy that could hurt you has been controlled, either through testing for energy, or ensuring that you understand the required isolation for your work. 	
<p>Scope of Application</p>	
<p>This rule applies:</p> <ul style="list-style-type: none"> To work on de-energized equipment that is on the Power System. <ul style="list-style-type: none"> A Safety Protection Guarantee (SPG) or Lockout is required per Safety Practice Regulations (SPR). To work on equipment that is not on the Power System. <ul style="list-style-type: none"> Worker Protection Practices (WPP) Lockout is used in WPP areas. OSH Standard 204 Personal Lockout is used in Power System Safety Protection (PSSP) areas. 	
<p>Special Conditions</p>	
<p>This rule does not apply when:</p> <ul style="list-style-type: none"> Checking equipment function or trouble shooting. Isolating or de-isolating equipment. Performing battery maintenance. Carrying out on-line testing. 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> You must be able to describe which hazardous energy sources have been controlled (i.e. electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or a force such as gravity). 	

Important Considerations cont.


- Treat high voltage conductors and electrical equipment as energized unless a Safety Protection Guarantee (SPG) or Lockout is in effect and Worker Protection Grounding/Bonding and/or Blocking has been applied.
- If you are unsure whether or not you are protected, ask to have the isolation explained to you by a qualified worker:
 - Check with the Safety Protection Guarantee (SPG) holder that a Safety Protection Guarantee (SPG)—or with a work leader that a Lockout—is in effect.
 - Check that the Safety Protection Guarantee (SPG) or Lockout has the isolation you need for the job you'll do.
- Fraser Valley Office/Southern Interior Office and Generation Operators play a critical role in establishing an appropriate Safety Protection Guarantee (SPG) or Lockout and must ensure they are returned prior to energizing the equipment.

Key References

Type and #	Location	Comments
SPR 500	Safety Practice Regulations	Safety Practice Regulations - Isolating, Grounding, and Blocking – General
SPR 600	Safety Practice Regulations	Safety Practice Regulations – Isolation and Tag Out: Distribution and Transmission
SPR 700	Safety Practice Regulations	Safety Practice Regulations – Isolation and Lockout: Generating Stations
OSH Std. 204	200 Safety Engineering	Personal Lockout
WSBC OHSR 19.8	Isolation and lockout	
WSBC OHSR 19.9	Person In Charge	
SOO 1T-12A	PSSP	Power System Safety Protection (PSSP) – System Operating Order 1T-12A

For more information, contact:

The Safety Hotline – 604-529-5540 (or local 75540).
Safety@bchydro.com

<p>Rule 3: Test for hazardous energy</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> • To prevent contact with hazardous energy (electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or a force such as gravity) by first testing for the absence of energy. • To ensure that a qualified person has verified that normal sources of hazardous energy have been isolated. This includes re-testing if circumstances change while you are working. • There have been incidents of injury or death because the assumption was made that equipment was safe without testing. <p>Rationale for Wording:</p> <ul style="list-style-type: none"> • The statement is kept deliberately short, so you can remember this life saving rule easily and stop to think that there may be forms of energy present that are not visible. 	
<p>Scope of Application</p>	
<p>This rule applies:</p> <ul style="list-style-type: none"> • To working on isolated equipment. • To situations where you are unclear if hazardous energy exists. • Before applying grounds. • To working in electrical panels. • To working on or around current transformer circuits. 	
<p>Special Conditions</p>	
<ul style="list-style-type: none"> • Some work will require the equipment to be energized. In these situations the equipment is not isolated. Specific work procedures and other barriers are in place to ensure the work is performed safely, for example, energy being restored for testing purposes. 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> • Verification is a check or test to ensure that a hazardous energy source has been isolated. Examples of verification include: <ul style="list-style-type: none"> ○ Always making sure you correctly check for system voltage before applying Worker Protection Grounds. ○ Using vents and drains to verify the isolation of high pressures. ○ Using approved voltage or current checking/testing devices. 	

Important Considerations cont.		
<ul style="list-style-type: none"> • High voltage electrical equipment is treated as energized until Worker Protection Grounds have been applied. • Always confirm that you have the correct isolation to protect yourself before starting work. • If you are unsure about the isolation, ask a qualified person. 		
Key References		
Type and #	Location	Comments
SPR 500	Safety Practice Regulations	Safety Practice Regulations - Isolating, Grounding, and Blocking – General
SPR 600	Safety Practice Regulations	Safety Practice Regulations – Isolation and Tag Out: Distribution and Transmission
SOO1T-12A	PSSP	Power System Safety Protection (PSSP) – System Operating Order 1T-12A
OSH Std. 209	200 Safety Engineering	Isolation of Mechanical Apparatus
WSBC OHSR 19.22 (1)	Grounding and Blocking	
WSBC OHSR 10.06	Checking Locked Out Equipment	
For more information, contact:		
The Safety Hotline – 604-529-5540 (or local 75540). Safety@bchydro.com		

Rule 4: Ensure that Worker Protection Grounding/Bonding is applied



Intent

Why:

- To provide you with a last line of defense in the event of accidental energization of high voltage electrical equipment.
- Properly applied grounding/bonding protects you from accidental energization (induction, a power source, contact with other conductors or lightning).
- There have been incidents of serious injury or death as a result of grounding/bonding not being applied or not being applied correctly.

Rationale for wording:

- The word “*ensure*” reflects the fact that you need to make certain the grounds are applied for your work zone, because you may not establish the grounding yourself.

Scope of Application

This rule applies:

- In any circumstance when working on high voltage (751 Volts and above) conductors or electrical equipment.

Special Conditions

This rule does not apply to:

- Low voltage work (750 volts and below).
- Live line work.
- Barehand or rubber glove work.

Use approved work methods in these circumstances.

Establishing an equipotential zone is best practice. Where an equipotential zone cannot be established, other approved Worker Protection Grounding/Bonding procedures must be used to provide adequate worker protection.

- Recommended Grounding Practices for the Maintenance Work, Major Repair Activity, and Testing of Hydroelectric Generators.
- The grounding manual for Transmission & Distribution – Worker Protection Grounding/Bonding Manual.

Important Considerations

- Worker Protection Grounding/Bonding is not meant to stand alone; it is to be applied in addition to a Safety Protection Guarantee (SPG) or as a part of a Lockout.

Important Considerations cont.

- Verify that normal sources of hazardous energy have been isolated. Always isolate, test and ground.
- Check the lock-out sheet, or physically check that the grounds are applied for your work zone, if you are unsure, ask a qualified worker.
- Apply the specific procedures for underground work to identify cables when grounding. Follow the Safety Practice Regulations (SPR) by applying grounding/blocking tags when grounds are not within your direct sight and control.
- Worker Protection Grounding/Bonding and Blocking must remain in place except during any testing that requires its removal.
- Document grounding plans on your tailboard (for Transmission & Distribution).
- If you are unsure of any aspect of your Grounding/Bonding Plan ask a qualified worker.

Key References

Type and #	Location	Comments
SPR 500	Safety Practice Regulations	Safety Practice Regulations - Isolation, Grounding, and Blocking - General
Worker Protection Grounding/ Bonding Manual	Work Methods	Manual > Worker Protection Grounding/Bonding Manual
Maintenance Standard 01.20.MTCE.03	Controlled Document FileNet Search In the document no. or key word type: 01.20.MTCE.03	Recommended Grounding Practices for the Maintenance Work, Major Repair Activity, and Testing of Hydroelectric Generators
Live Line Manual	Work Methods	
WSBC OHSR 19.22(2)	Grounding and Blocking	

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Rule 5: Protect yourself from falling when working at height



Intent

Why:

- To minimize the risk of falling, and reduce or eliminate any possible injury resulting from a fall.
- Falls from height are a frequent cause of serious incidents at BC Hydro.

Rationale for Wording:

The term “*protect*” refers to Fall Protection which includes:

- Eliminating the fall hazard.
- Using a physical barrier.
- Using Fall Restraint, Fall Restrict and Fall Arrest systems, equipment, work plans and work procedures.

Scope of Application

This rule applies:

- When work is being performed in areas where a fall greater than 3 metres (10 feet) may occur.
- Where an unusual risk of injury may exist, regardless of fall distance, e.g. work above pits, protrusions, open tanks, or moving machinery.

Special Conditions

- None

Important Considerations

- There are different requirements for working on or with ladders as detailed in OSH Standard 609.
- Inspect your fall protection equipment before you use it to make sure it is in good working order.
- Use an approved anchor point for the work you are doing. If you do not have an approved anchor point use an alternate approved method to work safely at heights.
- Visually inspect anchor points prior to use.
- Have an approved Fall Protection Plan when working at heights of over 7.6 metres (25 feet) without guardrails.

• **Important Considerations cont.**


- Whenever you are wearing Fall Protection Equipment, you must consider how you could be rescued.
- You must be trained in the use of Fall Protection Equipment before using it.
- A Specific Fall Protection plan may be required for your work, check with your Occupational Safety Health (OSH) Specialist if in doubt.

Key References


Type and #	Location	Comments
SPR 300	Safety Practice Regulations	Safety Practice Regulations - Personal Protective Equipment and Tools
SPR 400	Safety Practice Regulations	Safety Practice Regulations - Work near, or on, Energized Conductors and Equipment
OSH Std. 608	600 Safety Equipment	Fall Protection
OSH Std. 609	600 Safety Equipment	Ladders
WSBC OHSR 11.2	Obligation to Use Fall Protection	

For more information, contact:


The Safety Hotline – 604-529-5540 (or local 75540).
Safety@bchydro.com

<p>Rule 6: Maintain a safe atmosphere in a confined space and ensure you can be rescued</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> • There is a considerable amount of work done within confined spaces at BC Hydro. • Confined space work poses a serious risk of injury or death if proper procedures are not followed. <p>Rationale for Wording:</p> <ul style="list-style-type: none"> • The phrase “<i>maintain a safe atmosphere</i>” indicates the importance of testing for clean respirable air before entry and while working in the confined space. • The phrase “<i>ensure you can be rescued</i>” acknowledges your responsibility to make sure timely rescue can be performed. 	
<p>Scope of Application</p>	
<p>This rule applies:</p> <ul style="list-style-type: none"> • At all times when working within a confined space. 	
<p>Special Conditions</p>	
<ul style="list-style-type: none"> • None. 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> • Prior to commencing any work involving a confined space, the following shall be completed by a qualified person: <ul style="list-style-type: none"> ○ A written hazard assessment. ○ An approved safe work procedure. ○ An approved rescue plan. • The ability to rescue a worker is critical to working safely within a confined space. It is important to have your rescue plan and required rescue equipment in place prior to entry as rescues are usually difficult and time sensitive. • It is possible to create an unsafe atmosphere within a confined space due to the nature of the work being done. Ensure your procedure addresses the effects of the materials brought into, and the work being done while in a confined space (e.g. welding, painting, cleaning or lead cable work). • If you are unsure whether or not the space in which you are to work is classified as a confined space, check with an Occupational Safety Health (OSH) Specialist. • Ensure there is a safety watch in place as per the requirements for that specific confined space. 	


Important Considerations cont.		
<ul style="list-style-type: none"> Do not begin work in a confined space without having a procedure appropriate to that space. 		
Key References		
Type and #	Location	Comments
SPR 122	Safety Practice Regulations	Safety Practice Regulations – Confined Space - Requirements
OSH Std. 303	300 Occupational Safety	Confined Spaces
WSBC OHSR 9.25	Testing the Atmosphere	
WSBC OHSR 5.48	Exposure Limit	
For more information, contact:		
The Safety Hotline – 604-529-5540 (or local 75540). Safety@bchydro.com		

<p>Rule 7: Prevent harmful exposure to known carcinogens, toxins and bio-hazards</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> Exposure to carcinogens, toxins, or bio-hazards has the potential to cause serious injury or death. Exposure may have both short-term and long-term health consequences. <p>Rationale for Wording:</p> <ul style="list-style-type: none"> For the organization the word “prevent” means identifying the hazards and putting systems in place to eliminate or mitigate the hazards. For you the word “prevent” means following approved work procedures to prevent exposure to self and others and to report instances of undocumented hazards. The word “known” means you are aware of the presence of harmful substances. 	
<p>Scope of Application</p>	
<p>This rule applies:</p> <ul style="list-style-type: none"> When working with or in the presence of any of these substances or other workplace hazardous materials. 	
<p>Special Conditions</p>	
<ul style="list-style-type: none"> None 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> Carcinogens and toxins within the BC Hydro workplace may include but are not limited to: <ul style="list-style-type: none"> Asbestos, lead, silica, mercury, polychlorinated biphenyls (PCBs), sulphur hexafluoride(SF6) (arcing bi-products), poly-aromatic hydrocarbons (PAH’s) . Bio-hazards may include but are not limited to needles or excrement. If you are unsure if the work you are doing may cause exposure to carcinogens, toxins, or biohazards check with a qualified person to determine if the workspace contains any of these hazards. Testing may be required prior to performing work. If an exposure control plan is required, it must be prepared by a qualified person (such as an Occupational Safety Health (OSH) Specialist or Occupational Hygienist). Use hazard specific Personal Protective Equipment. 	

Key References		
Type and #	Location	Comments
OSH Std. 300	300 Occupational Safety	Occupational Hygiene
BCH SDS database	SDS - BC Hydro	Safety Data Sheets Search
For more information, contact:		
The Safety Hotline – 604-529-5540 (or local 75540). Safety@bchydro.com		

<p>Rule 8: Don't work while under the influence of alcohol or drugs</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> • Consumption of alcohol and use of drugs (illegal, prescription or over-the-counter) can affect mental abilities like judgment, focus and awareness, as well as physical abilities like balance, coordination and reaction time. • Reduced mental and physical abilities could lead to serious injuries or death for yourself and others. 	
<p>Scope of Application</p>	
<p>This rule applies:</p> <ul style="list-style-type: none"> • To all employees of BC Hydro and contractors while they are engaged in BC Hydro business. • At all times while driving BC Hydro fleet or rental vehicles. • To the use of personal vehicles on BC Hydro business. 	
<p>Special Conditions</p>	
<ul style="list-style-type: none"> • There are no special circumstances where this rule does not apply. 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> • If you are taking medication that may affect your abilities to work safely, discuss this with your manager. Your manager may ask for the results of a functional assessment from your medical practitioner regarding the duties you can safely perform while taking your medication. • If you see someone at work who appears to be under the influence of alcohol, medication or other drugs, stop the individual from working. Let a supervisor or manager know of the situation and the action you have taken. 	

Key References		
Type and #	Location	Comments
Alcohol & Drug Policy	HydroWeb	Alcohol and Drug Policy
EFAP	HydroWeb	Employee and Family Assistance Program
For more information, contact:		
The Safety Hotline – 604-529-5540 (or local 75540). Safety@bchydro.com		

<p>Rule 9: Adjust your driving to the weather and road conditions</p>	
<p>Intent</p>	
<p>Why:</p> <ul style="list-style-type: none"> • You may spend a significant amount of time driving in the course of your work. The nature of the work may require you to travel during poor weather, challenging road conditions, and over difficult terrain. • There have been many vehicle incidents that could have resulted in fatalities. <p>Rationale for Wording:</p> <ul style="list-style-type: none"> • Adjusting your driving to the weather and road conditions could prevent a serious incident. 	
<p>Scope of Application</p>	
<p>This rule applies:</p> <ul style="list-style-type: none"> • To all employees of BC Hydro and contractors while they are engaged in BC Hydro business. • At all times while driving BC Hydro fleet or rental vehicles. • To the use of personal vehicles on BC Hydro business. 	
<p>Special Conditions</p>	
<ul style="list-style-type: none"> • None. 	
<p>Important Considerations</p>	
<ul style="list-style-type: none"> • When driving non-routine or hazardous routes consider: <ul style="list-style-type: none"> ○ Planning your journey so you are aware of the driving conditions and the hazards you may encounter. ○ Not driving if you are uncomfortable / unfamiliar with the vehicle or the driving conditions. ○ A worker check-in procedure. • Ensure your vehicle is properly equipped and appropriate for the terrain, weather and road conditions you may experience. • Consider cancelling or stopping your trip if conditions deteriorate or you are fatigued. 	

Key References		
Type and #	Location	Comments
OSH Std. 401	400 Transportation Safety	Motor Vehicle Safety
OSH Std. 801	800 Other Safety Topics	Employees Working Alone
BC Motor Vehicle Act (MVA) 144	BC MVA 144	Careless Driving Prohibited
BC MVA Act 131 (2)	BC MVA 131	Flashing Lights
For more information, contact:		
The Safety Hotline – 604-529-5540 (or local 75540). Safety@bchydro.com		