

Powertech Contractor Manual

Revision 0

2019-11-29

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Date: 2019-11-29	Date: 2019-11-29

Table of Contents

1 Introduction 4

2 Employer and Contractor Responsibilities 4

2.1 Powertech 4

 2.1.1 Coordinating Multiple Employer Workplaces (MEW)..... 4

 2.1.2 Responsibilities of Prime Contractor 5

2.2 Contractors..... 5

 2.2.1 WorkSafeBC Registration 6

2.3 Contractor Workers 6

2.4 Accident/Incident Investigations 7

2.5 Contractor Safety Meetings 7

2.6 Right to Refuse Work 7

2.7 Contractor Site Orientation 7

2.8 Worker Training and Orientation..... 8

3 Emergency Procedures..... 8

3.1 First Aid Services and Injury Reporting 8

3.2 Fire Emergency 8

4 General Site Rules 9

5 Work Site Inspections 10

6 General Site Work Procedures..... 10

6.1 Workplace Hazardous Materials Information (WHMIS) 10

6.2 Noise, Odour, Vibration, Dust and Temperature 10

6.3 Radiation and Radiofrequency Radiation..... 11

6.4 Personal Protective Clothing and Equipment..... 11

6.5 Confined Space Entry..... 11

6.6 Lockout..... 12

6.7 Working at Heights 12

6.8 Excavation..... 12

6.9 Tools, Machinery and Equipment 13

6.10 Ladders, Scaffolds, Temporary Work Platforms..... 13

6.11 Cranes and Hoists 13

6.12 Rigging 13

6.13 Mobile Equipment (vehicles, scissor lift and booms)..... 14

6.14 Use of Company Cars 14

6.15 Electrical Safety..... 14

6.16 Housekeeping 14

6.17 Visitor Tours 14

6.18 Hazards to the Environment 15

7 Exposure to Hazardous Substances 15

7.1 Types of Hazards 15

7.2 Working with Hazardous Materials 16

7.3 Hazard Control/Safe Work Procedures..... 17

 7.3.1 Asbestos-containing Building Materials..... 17

 7.3.2 Lead-based Paint and Other Lead Products..... 17

 7.3.3 Mercury in Switches and Light Materials..... 17

 7.3.4 Mold Growth on Building Materials..... 17

 7.3.5 WHMIS Products 18

 7.3.6 Pesticide Use 18

 7.3.7 Working Alone or in Isolation 18

8 Environmental Requirements..... 18

8.1 Water Quality..... 18

8.2 Waste Handling, Storage, Transport and Disposal 19

9 Garbage and Recycling 19

10 Quality Requirements 19

11 Revision History 20

12 Review Records..... 20

13 Appendix A: Powertech Contacts 21

1 Introduction

Powertech adheres to the quality and environmental requirements set by ISO 9001 and ISO 14001 respectively as well as to the highest standard of health and safety. We see the upholding and continuous improvement of health, safety, environmental and quality standards as a fundamental part of our daily work across every facet of our organization and expect that our contractors comply with all applicable workplace safety, environment and quality standards.

This Powertech Contractor Manual focusses on the health, safety, environmental and quality responsibilities of the contractors.

This program applies to all contractors working on Powertech site and was designed in accordance with [WorkSafeBC's Occupational Health & Safety Regulation](#) (OHSR) to ensure the health and safety of all Powertech's contractors and their employees and/or subcontractors.

This program sets out Powertech's minimum requirements for contractors on occupational health and safety, environmental and quality policies, general site work procedures, and emergency procedures, when performing work activities on Powertech's operated properties.

2 Employer and Contractor Responsibilities

2.1 Powertech

We aim to help contractors coordinate health and safety activities by:

- Providing contractors with all identified workplace hazards via orientations outlining potential hazards such as asbestos, lead-based paints, confined space, violence in the workplace, working alone, etc;
- Ensuring the requirements of the Workers Compensation Act and WorkSafeBC Occupational Health & Safety Regulation are met by regularly monitoring the contractor's health and safety performance onsite and documenting the results of the monitoring activity;
- Where required, evaluating a contractor's safety program and safe work procedures, before commencing onsite work;
- Where applicable, communicating the prime contractor's authority in the workplace and relationship with the contractor and subcontractors on workplace health and safety responsibilities.

2.1.1 Coordinating Multiple Employer Workplaces (MEW)

Unless otherwise stated, Contractors are primarily responsible for workplace health and safety responsibilities for their workers and their sub-contractors. If there are multiple contractors, two or more, who use the same work area at the same time, then Powertech, unless assigned to another qualified individual or organization, will perform the role of the Prime Contractor assuming the coordination responsibilities of the contractors. Any questions regarding this on a jobsite, should be directed to Facility manager or site representative prior to starting work.

2.1.2 Responsibilities of Prime Contractor

To carry out safety responsibilities in a MEW effectively, the Prime Contractor must have a system of coordination for all work taking place at the Workplace. The following steps should be followed:

- Prior to Prime Contractor's start of work, the Powertech representative and the Prime must sign the **Prime Contractor Designation Letter**.
- On completion of the work the Prime contractor status is returned to Powertech by signing the **Prime Contractor End of Responsibility Letter**.

For each scope of work or source contract, an orientation must be conducted. Prime Contractor representatives and Powertech Facility Manager must work together to ensure these documents are completed and signed by Powertech Representative, the Prime Contractor Representative and all Subcontractors' Representatives prior to the start of work.

The Prime Contractor Representative must conduct a Contractor Orientation for all crews including Subcontractors as well as any new employees/Subcontractors that begin work on the project.

Powertech may require qualified contractors to provide documentation such as:

- Health, safety and environmental manuals, programs and work practices
- Procedures
- Work Methods
- Work Permits where required
- Responsibilities (including project management and role details)
- Hazard/Risk assessments
- Prevention and control measures
- Training requirements/qualifications
- History of accidents/injuries
- Record retention
- Liability Insurance
- WorkSafeBC clearance letter

2.2 Contractors

Contractors must:

- Ensure workers are properly trained in and follow all aspects of workplace safety and health related to the services in your contract
- Ensure any services provided under contract are carried out in accordance with the [Workers Compensation Act](#), [WorkSafeBC regulations](#), and all other applicable statutes and regulations
- Provide immediate notice to Powertech of any damage, injury, or threat of damage or injury to persons or property while working on Powertech's property.

- Provide Powertech with a copy of their current safety program, exposure control plan, and safe work procedures, upon request.
- Train and educate workers in all aspects of workplace safety, in accordance with the WorkSafeBC Occupational Health and Safety Regulation.
- Ensure staff, residents and the public are always kept safe.
- Provide all necessary tools, materials and equipment for workers to perform tasks safely.
- Understand and be knowledgeable about workplace hazards.

2.2.1 WorkSafeBC Registration

Contractors under contract to Powertech must:

- Be registered with [WorkSafeBC](#) and be in good standing.
- Ensure all overdue or outstanding assessments are paid.
- Provide Powertech with your WorkSafeBC registration number or Certificate of Clearance.

If you are unsure of your registration status with WorkSafeBC, contact the Employer Service Centre at 604.244.6181 or toll free at 1.888.922.2768.

Note: Failure to comply with all applicable health and safety requirements will be cause for immediate termination or suspension of a contract, until the deficiency is rectified in a manner that is acceptable to Powertech and/or WorkSafeBC.

2.3 Contractor Workers

Contractors' workers are responsible for their own health and safety, as well as their fellow workers, while under their supervisors' direction. Worker responsibilities include:

- Sign in and out from site (Shipping and Receiving area)
- Being alert to hazards
- Reporting hazards and incidents/accidents to supervisors
- Reporting injuries to the first aid attendant
- Reporting any unsafe acts and conditions immediately to supervisors
- Ensure workers follow all environmental requirements specified in your contract and as detailed during job planning/tailboarding by Powertech employees.
- Using and wearing protective clothing and equipment when required
- Refusing unsafe work
- Learning and following safe work procedures and the company's safety program

It is mandatory that all contractors performing work on Powertech campus

- **Is aware of the Powertech Contractor Program**
- **Complete the Contractor Safety & Environment Orientation and successfully completed the Contractor Safety & Environment Quiz before initiating any work on campus. This training expires every year.**
- **Always keep the Contractor Orientation Certificate handy.**

2.4 Accident/Incident Investigations

Employers/ contractors are required by regulation to investigate accidents and incidents as per WorkSafeBC requirements.

Contractors are responsible for conducting their own accident/incident investigations while onsite and are required to prepare accident investigation reports in accordance with the WorkSafeBC OHSR. Powertech may request copies of these reports for our records.

Powertech may decide to conduct an independent accident investigation, depending on the nature and severity of the accident, when it affects our employees, property, and/or tenants.

2.5 Contractor Safety Meetings

Powertech recommends contractors hold safety meetings on a regular basis (aka crew talks) to ensure workers understand the requirements and potential hazards of the job, as well as safety precautions and safety equipment required. Other measures required by the Prime Contractor, where applicable, must also be followed.

Powertech may ask to sit in on these meetings or request meeting documentation for our records.

2.6 Right to Refuse Work

The *Workers Compensation Act* gives all workers the right to refuse unsafe work and work practices. Workers can refuse to perform a duty they have reasonable cause to believe would endanger the health and safety of themselves, other workers or Powertech staffs.

A worker exercising this right:

- Must immediately report the problem to their supervisor,
- Shall not be disciplined for exercising this right, and
- May be temporarily assigned alternative work at no loss in pay, until the matter is resolved

The contractor must inform a Powertech representative immediately if this situation occurs.

2.7 Contractor Site Orientation

Before contractors begin any work on Powertech's property, all activities must be coordinated with the Facility Manager or designated representative; either directly or through the Prime Contractor, if applicable. Such coordination will address the following topics at a minimum:

1. General site rules
2. Emergency evacuation
3. Fire protection, if applicable
4. Site specific hazards, concerns and/or procedures
5. First aid (where applicable)
6. Participation in Contractor Safety & Environment Orientation & successful completion of Contractor Safety & Environment Quiz

2.8 Worker Training and Orientation

Contractors are responsible for ensuring every new worker receives adequate worksite training and orientation, before starting work. The Contractor supervisor must continue to follow up to ensure workers can demonstrate safe work procedures. In addition, it is the responsibility of the Contractor to ensure workers are qualified to perform their assigned duties, including those requiring government licensing or certification.

Contractors and supervisors also must be trained to administer your health and safety program and provide training for your workers.

Powertech can ask to see contractor training records at any time. Please ensure these records are readily available upon request.

3 Emergency Procedures

3.1 First Aid Services and Injury Reporting

Contractors are responsible for supplying first aid equipment, supplies, facilities and services. Powertech does ensure that a First-Aid attendant is always available during normal working hours (8:00 AM -4:30 PM). The First Aid attendants have access to the First Aid Room and supplies and are trained to handle emergency situations as well as minor injuries. They may be contacted

- by dialing “1300” from land line at Powertech
- or call on 236-668-7683 from any cell.

Please do not hesitate to Call 911 directly for any emergency or if there is no response from the first aid team.

In the case of an injury resulting in time loss and/or medical aid, the Contractor is required to report the injury/incident to WorkSafeBC as per WorkSafeBC requirements.

An employer must immediately report fatalities and serious injuries; major failure or collapse of a building, tower, crane, hoist, temporary construction support system or excavation; or major release of a hazardous substance to WorkSafeBC Prevention Emergency Line at 604.276.3301.

Note: Powertech Representative needs to be notified of any contractor injury.

3.2 Fire Emergency

Powertech properties have fire safety measures in place to protect occupants and visitors, such as smoke alarms, heat detectors, fire alarms, evacuation routes, assembly areas and other safeguards. When working at a Powertech site, contractors need to be familiar with the onsite fire safety measures.

Procedure for evacuating the building during an emergency

1. Pull the fire alarm

Use a fire extinguisher to suppress small fires if properly trained to do so.

2. Evacuate the building

A continuous alarm will sound, and strobe lights will indicate an alarm. Contractors shall leave the building at a walk, by means of the closest accessible exit, closing all doors as they leave. Leave personal items behind.

3. Report to Muster Station

Contractors shall proceed to the Emergency Muster Station located across from the Northeast exit door of the main building. Do not congregate on the road. No one shall re-enter the building until the all-clear signal (**three short horn blasts**) is announced by an Emergency Response Coordinator (orange hat).

4 General Site Rules

Contractors and onsite workers must abide by the following general site rules:

- All workers are expected to show up fit for work and should not be impaired or under the influence of alcohol, drugs or other substances.
- A worker shall treat all individuals present in the workplace with courtesy and respect.
- Personal Protective Equipment (PPE) must be maintained in good condition and used correctly when required for the work.
- Only properly trained and authorized workers shall operate tools, equipment and machinery.
- Work in restricted areas to be arranged and accompanied by Powertech Staff.
- All unsafe acts and conditions must be reported to the supervisor or safety representative without delay.
- A worker who sustains any injury, no matter how slight, must report it to the first aid attendant or their supervisors immediately
- Workers are expected to maintain good housekeeping in their areas of responsibility.
- Workers shall not engage in any improper activity that creates a hazard. This includes practical jokes, fighting, unnecessary running or similar conduct.
- Smoking is only permitted outdoors in designated smoking areas, or at a minimum of 3 meters (10 feet) from any doorways, opening windows and any air intakes, and where indicated. Care must be taken to properly extinguish and discard butts so as not to create a fire hazard.
- Workers shall not engage in behaviour towards any individuals that could cause injury or threatening behaviour in which the individual could reasonably believe they are at risk of injury.
- Workers shall not conduct or communicate themselves to any individual in a way that the worker knew, or reasonably ought to have known, would cause an individual to be humiliated or intimidated.

- Workers shall ensure all equipment, material and tools are used in accordance with WorkSafeBC regulations and are secured at the end of the workday to avoid accidents, misuse, theft, or vandalism.

If anyone is found in violation of these rules and procedures, Powertech will take appropriate action, from issuing informal/formal reminders to banning individual access to the site and may cancel the contract depending on the severity of the violation.

5 Work Site Inspections

Contractors must ensure worksites are regularly inspected so workers are not exposed to hazards that could endanger their health, safety and environment. Powertech may send a representative to site inspections; the site supervisor will accompany our representative on the inspection. Contractors are required to correct any hazards and/or unsafe conditions identified during the inspection without delay.

Powertech must be advised of any recommendation from inspections/ observations that may affect our operations, staff, or property to allow for review by the employer or Joint Health and Safety representative/committee.

6 General Site Work Procedures

Powertech expects contractors to provide workers with safe work procedures that comply with WorkSafeBC OHSR, as part of their safety program.

Contractors must also follow specific safety policies and procedures that pertain to the contractor's organization and workers, as outlined below:

6.1 Workplace Hazardous Materials Information (WHMIS)

As employers, contractors are responsible for protecting workers from exposure to chemical or biological substance that could cause adverse health effects. The contractor's Workplace Hazardous Material Information (WHMIS) program must comply with WorkSafeBC WHMIS requirements.

Powertech maintains an inventory of controlled products on our site. If you need more information on WHMIS or Safety Data Sheet (SDS) information of products that workers may be in contact with, please contact your Powertech representative.

6.2 Noise, Odour, Vibration, Dust and Temperature

Contractors must meet WorkSafeBC requirements for noise, odour, vibration, dust and temperature exposure. Contractors are required to develop and implement exposure control plans for workplace exposure to temperature extremes, poor air quality and administer a noise-hearing conservation program, when these conditions exist.

6.3 Radiation and Radiofrequency Radiation

Contractors must also adhere to WorkSafeBC radiation compliance requirements and Health Canada's Radiofrequency Exposure Guidelines. Contractors exposed to these conditions, equipment, and telecommunication antennas are required to develop and implement exposure control plans for workplace exposure to radiation.

6.4 Personal Protective Clothing and Equipment

Contractors and their workers are required to provide, maintain and wear personal protective clothing and equipment (PPE) listed in the WorkSafeBC Regulation.

- Footwear must provide an appropriate level of protection; CSA approved footwear is required for all construction activities.
- Hard hats are required when there is a danger of head injury from falling, flying or thrown objects, or other harmful contacts.
- Workers must wear properly fitting safety eyewear appropriate for workplace conditions, if handling or exposed to materials likely to injure or irritate the eyes.
- Respiratory protection of an approved type must be used when there may be exposure to harmful gasses, mists, fumes, dust or vapours.
- Hearing protection is required in noisy environments.

Powertech may request or require contractors to use specific PPE during the terms of a contract. Before beginning any work, ensure that you know how to select and use the correct protective equipment required. Remember to observe all signage at the entrance of all labs indicating the required PPE.

6.5 Confined Space Entry

Powertech has created a Confined Space Program (CSP) to protect the health and safety of personnel required to enter a confined space, as defined by WorkSafeBC's Occupational Health and Safety Regulation.

Powertech's inventory of confined spaces includes places commonly found on the property of buildings, such as vaults, boilers, maintenance holes and sumps. We identify confined spaces through

- Internal work orders
- Signage at entry points

Before a contractor's worker is permitted to enter a confined space, the contractor must implement a written confined space entry program that complies with the WorkSafeBC OHSR. In addition, Powertech will provide a copy of any existing hazard assessment of the space before entry.

Contractors needing to enter areas Powertech has identified as confined spaces are required to:

- Gain confined space entry permit from a Powertech Representative

- Follow Powertech's Confined Space Program requirements and your company's confined space program
- Identify and resolve any discrepancies between Powertech's and your company's confined space programs with our OSH specialist (in the event of a discrepancy, Powertech's Confined Space Program takes precedence)
- Provide adequate confined space entry instruction and training to all personnel assigned confined space duties, before starting the entry work
- Have hazard assessments and entry procedure documents prepared by a qualified professional for the confined space work
- Provide Powertech with a photocopy of all confined space documentation (including entry permits)
- Upon completing an entry, submit a completed permit to the Powertech's OSH specialist.

6.6 Lockout

Contractors must develop and implement a Lockout Program and lockout procedures in compliance with WorkSafeBC OHSR requirements.

Powertech has specific locks for contractors and the contractor must consult the Powertech representative for any lock out requirements when lockout is required.

Inform the site supervisor and onsite Powertech's personnel of the activity before proceeding.

6.7 Working at Heights

Contractors are responsible for training and educating workers on fall protection measures, as well as fall protection systems and procedures specific to your worksite.

Any contractor or worker working 3 meters (10 ft.) or more above ground is required to use a fall protection system for personal protection. In addition, you must develop and be able to provide a written fall protection plan under the WorkSafeBC OHSR, if requested.

Depending on the site location, the contract administrator may have information on roof anchors, equipment or other fall protection measures.

6.8 Excavation

Before beginning an excavation, locate and identify utility services in the area, such as electrical, gas, hydrogen gas, water and sewer services. Any danger to workers from these utility services must be eliminated or controlled.

Contact BC One Call, a central agency you can call to find out what is buried on your site. BC One Call provides a 24/7, 365 days, telephone service at 1.800.474.6886.

When the excavation is greater than 1.2 meters (4 ft.), and less than 6 meters (20 ft.), the walls of the excavation must be at a 45-degree cutback slope, properly shored, or use a trench box. Contractors must properly position and use a ladder to safely access and egress from the excavation.

Contractors must carry out excavation work in accordance with the written instructions of a professional engineer or professional geoscientist when:

- The excavation is more than 6 meters (20 ft.) deep, or
- Support structures other than those specified in the regulation are used in the excavation, or
- An improvement or structure adjacent to the excavation could endanger workers, or
- The excavation is subject to vibration or hydrostatic (water) pressure

A professional engineer's plan and written instructions to support or slope the excavation sides must include information on expected subsurface conditions. A copy of the plan and any written instructions must be available at the site, signed and sealed by the engineer.

6.9 Tools, Machinery and Equipment

Contractors are responsible for providing their own equipment and maintaining it in safe working order, as required by WorkSafeBC.

Ensure the tools, machinery and equipment you bring onto Powertech's sites are in good working condition. All electrical devices must be a minimum three wire and properly grounded.

6.10 Ladders, Scaffolds, Temporary Work Platforms

Contractors must keep ladders, scaffolds, and temporary platforms in good working condition and adhere to [WorkSafeBC OHSR](#) specification requirements. If the equipment is damaged or does not meet requirements, you must take it out of service and repair or replace it immediately.

6.11 Cranes and Hoists

Contractors working in or around cranes or hoists must ensure the equipment:

- Is designed, constructed, erected, disassembled, inspected, maintained and operated by the crane manufacturer or a professional engineer, and
- Meets the requirements and standards listed in [WorkSafeBC's OHSR](#)

6.12 Rigging

Rigging procedures must comply with [WorkSafeBC's OHSR](#), with qualified workers trained and educated in these procedures.

Ensure qualified workers—familiar with the rigging that will be used, and the code of signals authorized by the WorkSafeBC Board for controlling hoisting operations—perform or supervise rigging and slinging.

6.13 Mobile Equipment (vehicles, scissor lift and booms)

Contractors are responsible for:

- Ensuring all mobile equipment meets the requirements of the [Motor Vehicle Act](#) or the [Industrial Roads Act](#)
- Maintaining mobile equipment in a safe operating condition, in accordance with applicable regulations
- Keeping maintenance records for any equipment service, repairs or modifications
- Adequately instructing all workers operating the equipment in its safe use, and ensuring demonstrated competency in operating the equipment
- Protecting workers when moving equipment and from the equipment's moving parts
- Allowing only authorized workers to operate mobile equipment
- Ensuring lifting devices have appropriate clearance with any overhead obstacles
- Ensuring personal vehicles are parked in designated areas only

6.14 Use of Company Cars

Contractors are not all allowed to drive a Powertech vehicle.

6.15 Electrical Safety

Contractors are required to inform workers of existing onsite electrical hazards before starting work, including any new electrical hazards that may develop during a contract. Contact Powertech before digging to ensure underground power and/or services have been adequately identified to prevent accidental contact.

6.16 Housekeeping

Contractors are responsible for keeping their work area clean and free of loose materials and debris, these include:

- Safely and neatly stack any materials stored at the workplace and do not block fire egress routes.
- Collect and place all waste in appropriate waste containers every day.
- Remove or bend over any protruding nails or screws from waste materials; place them in scrap containers for disposal.

6.17 Visitor Tours

Unless otherwise given permission in writing by Powertech, Contractors are not permitted to walk through Powertech buildings unaccompanied and may only enter laboratory or test areas under the direct supervision of qualified Powertech Staff.

6.18 Hazards to the Environment

Contractors are required to carry out their work in a manner than does not unduly pose a risk to the environment. Where environmentally hazardous materials such as oils, solvents, any other chemicals or ozone depleting substances are to be used, the Powertech representative must be informed and approval received prior to work start. Contractors must be sufficiently trained in their use, handling and storage. All waste must be segregated for disposal appropriately.

7 Exposure to Hazardous Substances

Many hazardous substances and situations may be encountered at the workplace. If not properly identified and assessed, these hazards have the potential to expose workers to serious injury or occupational disease.

7.1 Types of Hazards

Hazards/Labs	Information	Procedure
High Voltage Electrical Hazards	<ul style="list-style-type: none"> Unattended tests with exposed High Voltage Metal barrier fences with red light 	<ul style="list-style-type: none"> Do not enter rooms that contain High Voltage tests, unless accompanied by a qualified person
High Voltage Lab	<ul style="list-style-type: none"> Unexpected flashovers occur during testing Loud sound 	<ul style="list-style-type: none"> Do not enter rooms that contain High Voltage tests, unless accompanied by a qualified person
High Power Lab	<ul style="list-style-type: none"> Explosion occur frequently during testing Subsequent fires Release of gases and vapours that can pose risk to personnel Restricted by fixed fencing and keyed interlocks 	<ul style="list-style-type: none"> Do not enter any areas associated with the High-Power Lab unless accompanied by a qualified person from the High Power Lab.
Chemical Hazards	<ul style="list-style-type: none"> Chemicals used at Powertech can be toxic and corrosive 	<ul style="list-style-type: none"> Treat every chemical as poisonous Never taste anything in the labs Do not drink or eat in the labs Do not sniff any bottle or test tube
Mechanical Hazards	<ul style="list-style-type: none"> Several machines performing mechanical test Loud noise Overhead crane 	<ul style="list-style-type: none"> Unauthorised personnel should not operate machines Avoid contact with any tests that are in operation Listen to warning alarm and lights when crane is in operation Do not enter lab when there is a sign placed upon the door indicating dangerous test is in progress.

<p>High Pressure Containers</p>	<ul style="list-style-type: none"> • High Pressure containers for storage of variety of gases 	<ul style="list-style-type: none"> • Do not enter Gas System South Yard without prior approval from the team. • Containers should be secured to solid object, if cannot secured, should laid out on the ground • Put protective cover on the valve • Avoid impact, high heat and damage in any form to the container
<p>Flammable Gases</p>	<ul style="list-style-type: none"> • Annex A has an electrolyser that produced hydrogen gas • Natural gas compressor operating periodically • Storage of flammable gases in south yard 	<ul style="list-style-type: none"> • Do not enter Gas System South Yard without prior approval from the team. • NO OPEN FLAME in the gas yard

7.2 Working with Hazardous Materials

Exposure Control Plan

Under the WorkSafeBC OHS Regulation, contractors require an exposure control plan when workers risk exposure to a hazardous substance or situation in the workplace. An exposure control plan should contain work procedures specific to the hazardous exposure location, with step by step instructions defining what is required to reduce exposure.

Here is a general list of items requiring contractors to implement an exposure control plan:

- [OHSR 5.57 Controlling Exposure](#) – If it is not practicable to replace a material referred to in section 5.57(1) of the WorkSafeBC OHSR (designated substances) with a material that reduces risk, the employer must implement an exposure control plan
- [OHSR 6.3 Asbestos](#) – If a worker is or may be exposed to potentially harmful levels of asbestos
- [OHSR 6.34 Biological Agents](#) – If a worker is or may be exposed to biological agents such as bodily fluids
- [OHSR 6.60 Lead](#) – If a worker is or may be exposed to lead in excess of 50% of the exposure limits, or if exposure through any route of entry could result in elevated lead body-burdens, as defined by WorkSafeBC
- [OHSR 7.20 Ionizing and Non-ionizing Radiation](#) – If a worker exceeds or may exceed an applicable action level for ionizing or non-ionizing radiation
- [OHSR 7.29 Heat Stress](#) – If a worker is or may be exposed to thermal conditions which could cause heat stress
- [OHSR 7.34 Cold Stress](#) – If a worker is or may be exposed to thermal conditions that could cause cold stress or injury

7.3 Hazard Control/Safe Work Procedures

Contractors who disturb or work with hazardous substances must develop safe work procedures for specific hazards, by documenting:

- How to perform the work safely
- Health precautions to be aware of
- Control measures to contain the hazardous material
- Safety equipment required
- PPE required
- How to store and dispose of materials
- How to set up the area and how to clean up when the work is complete

The following workplace risks require elimination or control procedures to ensure worker safety:

7.3.1 Asbestos-containing Building Materials

Powertech maintains an inventory of all materials tested for the presence of asbestos fibres in many of our buildings, and we continue to add to this inventory. Contractors and subcontractors are responsible for checking the inventory to ensure you are not disturbing asbestos-containing materials (ACM) without safety precautions.

If you think the contract work may disturb suspected ACM, arrange for additional sampling.

Contractors can view the properties inventory by requesting the asbestos inventory from Powertech.

If asbestos-containing materials are present, contractors must comply with the WorkSafeBC OHSR related to working safely with asbestos, and have written safe work procedures for working with, removing and disposing of asbestos-containing building materials.

7.3.2 Lead-based Paint and Other Lead Products

Powertech main building underwent lead abatement in 2015. Though we are not expecting any remaining lead in this building, to be on precautionary side we consider that lead may be present. Before performing any work that might disturb suspected lead-containing materials, conduct a survey to determine if lead is present. If so, implement a safe work procedure before disturbing the materials.

7.3.3 Mercury in Switches and Light Materials

Mercury may be present in a building, depending on its age. Before performing any work that might disturb suspected mercury-containing materials, conduct a survey and, should mercury exist, implement a safe work procedure before disturbing the materials.

7.3.4 Mold Growth on Building Materials

Depending on the work you're performing, you may locate mold growth that was not identified earlier. In this event, please inform Powertech and develop a safe work procedure to follow.

7.3.5 WHMIS Products

Powertech staff has access to a database of all controlled products Powertech uses through our online WHMIS database. You can obtain copies of safety data sheets through your OSH specialist.

7.3.6 Pesticide Use

Powertech follows the provincial Integrated Pest Management Program guidelines and WorkSafeBC standards for applying pesticide. All pesticide application is performed by contracted external services.

7.3.7 Working Alone or in Isolation

If a Contractor is required to work alone or in isolation under conditions that present a risk of disabling injury, Powertech has procedures to monitor your well-being via radio communication. These are covered under Powertech's "Working Alone or in Isolation Procedure". Examples of the type work which may present a risk of disabling injury include working in certain chemical, materials, or electrical labs. Contact your Powertech Representative, if a contractor is required to work alone or in isolation under conditions which present a risk of disabling injury.

8 Environmental Requirements

Powertech is committed to operating in an environmentally responsible manner and has implemented an Environmental Management System registered under ISO 14001. Contractors shall:

- Comply with all applicable federal, provincial and local environmental regulations, as well as the terms and conditions of the contract and Powertech environmental standards.
- Inform Powertech representative should there exist concerns about any environmental regulatory requirements and resolve any ambiguity prior to continuing work.
- Report all environmental incidents and emergencies on Powertech property (including minor spills) to Environmental Specialist (See Appendix A for contact information)

8.1 Water Quality

All outside storm drains on Powertech property discharge directly to a nearby fish-bearing stream. Nothing other than rainwater should enter the storm sewer system.

Contractors shall ensure the following:

- Contractors shall employ Best Management Practices to prevent spills from entering a storm drain.
- Contractors shall not discharge any material into storm drains, sewers, or waterways.
- Most Powertech facilities have Spill Prevention, Control and Counter measure and Storm Water Management Plans as required. Contractors shall comply with the requirements.
- Spill kits are provided at various locations throughout Powertech campus. Prior to starting work, check for the location of the nearest spill kit and make sure that it has adequate supplies.

- Any spill, small or big shall be reported to Powertech representative. Contact your Powertech Representative and/or shipping and receiving to arrange for proper oily waste disposal.
- Sink and floor drains inside the main Powertech building discharge directly to the sanitary sewer system except for specific labs where it goes through the Chemical Lift Station. In the event of a hazardous substance spilled down the drain, please notify the Environmental Specialist to isolate the spill.

8.2 Waste Handling, Storage, Transport and Disposal

Contractors shall

- Dispose of or recycle all waste materials appropriately. It is expected that all contractors are responsible for disposal/recycling of their own waste unless specific arrangements have been made.
- Have approval and coordinate with the Environmental Specialist when disposing of any materials at Powertech
- Use approved hazardous waste disposal and transportation vendors, and non-hazardous waste disposal facilities that are authorized to do the work
- Maintain any required logs, reports or notifications and provide copies to Powertech upon request
- Deliver Generator Copy 1 and 6 of Hazardous Waste Manifest to Powertech Environmental Specialist within 72 hours of hazardous waste shipments.
- Comply with the hazardous waste management standard if the job involves handling, generating, characterizing, packaging, storing and labeling hazardous waste.

9 Garbage and Recycling

Powertech expects that all contractors will dispose of or recycle all waste materials appropriately. It is expected that all contractors are responsible for disposal/recycling of their own waste unless specific arrangements have been made. Before disposing of any material at Powertech, please speak with the Powertech Representative or the Shipper/Receiver for permission and to make sure that the correct bins for waste materials will be used.

10 Quality Requirements

Powertech expects its Contractor(s) to deliver their services under controlled conditions to ensure quality of work (e.g., availability of trained personnel and documented processes, implementing monitoring and validation activities, use of suitable equipment, prevention of human error, etc.). As an OQM-certified organization, Powertech also expects its Contractors delivering engineering work to comply with applicable [Practice Guidelines \(including Quality Management Guidelines\)](#) by the Engineers and Geoscientists British Columbia.

Please see additional details below:

Major Construction Services (e.g., major building or laboratory construction/repairs)

- The Contractor is required, as appropriate, to submit a Quality Management Plan/Control Plan that describes how they intend to achieve quality of their service(s) before the work starts.
- During the performance of work, the Powertech Representative shall monitor compliance to Contractual requirements and will issue Non-Conformance Reports (NCRs) to the Contractor to address any issues, as necessary.
- At substantial completion of work, the Powertech Representative and Contractor shall conduct a site walk-thru to determine if there are any deficiencies based on the Scope of Work/Contract. A Deficiency List shall be produced (as appropriate) and shall form part of the Certificate of Substantial Completion that the Contractor will issue for approval by the Powertech Representative. Any deficiencies found shall be addressed before the final completion.
- Upon completion of the work and correction of all deficiencies, a Certificate of Final Completion shall be issued by the Contractor for approval by the Powertech Representative.
- For any structural design performed by the Contractor that requires Independent Review, a copy of the completed *Checklist and Sign-off for an Independent Review* shall be submitted to the Powertech Representative as evidence that an Independent Review was performed. Refer to [Documented Independent Review of Structural Designs](#).

Other Services (e.g., equipment maintenance, equipment installation, waste handling and other minor repairs)

- During the performance of work, the Powertech Representative shall monitor compliance to Contractual requirements and will issue Non-Conformance Reports (NCRs) to the Contractor to address any issues, as necessary.
- Upon completion of work, the Contractor shall provide evidence to the Powertech Representative that contractual requirements were fully met (e.g., submission of testing/ commissioning data, visual inspection results, etc.). The Powertech Representative may also witness the Contractor’s final inspection/testing of the completed work.

Note: The Powertech Representative refers to the Project Lead or Project Manager.

11 Revision History

Version	Date Issued	Remarks
0	2019	<ul style="list-style-type: none"> • New Document

12 Review Records

Version	Review Date	List of Reviewers
0	2019	<ul style="list-style-type: none"> • Irfan Manzoor, Mark Condon, Julius Lai, Madhvi Ramnial

13 Appendix A: Powertech Contacts

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