



# **HEALTH, SAFETY AND ENVIRONMENTAL (HSE) REQUIREMENT FOR CONTRACTORS**

## DOCUMENT AUTHORIZATION

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## Review and Revision Record

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List of Document Revisions

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## Change Management Process

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If there is a deviation or other comments regarding this document, contact the Document Owner

## 1. Contents

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Review and Revision Record .....	2
Change Management Process .....	2
1. Contents .....	3
2. Summary Statement .....	7
3. Objectives .....	7
4. Scope .....	7
5. Definitions.....	7
6. PART I - GENERAL HSE REQUIREMENTS .....	8
6.1 Compliance with Laws/Regulations/PECL Requirements.....	8
6.2 PETRONAS Cultural beliefs.....	8
6.3 Health, Safety and Environment Policy .....	8
6.4 Upstream Process Safety Golden Rules.....	9
6.5 ZeTo Rules .....	10
6.6 Workplace Harassment, Bullying & Violence Prevention Policy.....	10
6.7 Whistleblower Policy.....	11
6.8 Contractor Prequalification & ISNetworld (ISN) .....	11
6.8.1 ISNetworld (ISN) .....	12
6.8.2 HSE Contractor Mitigation .....	12
6.9 Contractor's HSE Plan.....	13
6.10 Sub-Contractor Management .....	13
6.10.1 Sub-Contractor Approval by PECL.....	13
6.10.2 General PECL expectation.....	13
6.11 Contractor's H&S program & performance verification .....	14
6.12 Contractor's Kick off meetings, KPI reporting and Performance reviews .....	14
6.12.1 Kick Off meeting.....	14
6.12.2 KPI Reporting .....	14
6.12.3 HSE Performance Review.....	14
6.13 Work stoppage and removal of contractor personnel .....	15
6.13.1 General .....	15
6.13.2 Worker and visitor responsibility.....	15
6.14 Worker competency requirements.....	15
6.15 Worker orientation and training requirements.....	16
6.15.1 Common Safety Orientation (CSO) .....	16
6.15.2 PECL Site Specific Orientation.....	16
6.15.3 Training Requirements .....	16
6.16 Young/New/Inexperienced workers program .....	17
6.17 Hazard and Risk Management.....	18

# Health, Safety and Environmental (HSE) requirement for CONTRACTORS

---

6.17.1	Hazard Identification and Control.....	18
6.17.2	Initial assessment of the Project HSE risks .....	18
6.17.3	Energy Based Hazard Identification program and Energy Wheel .....	18
6.17.4	ToolBox/pre-job safety meeting .....	19
6.17.5	Job Hazard Assessment (JHA) .....	19
6.17.6	Managing changes at work .....	20
6.17.7	HSE Inspection/Audit .....	20
6.18	Emergency Response Preparedness .....	20
6.19	Security .....	21
7.	<b>PART II - SPECIFIC HSE REQUIREMENTS .....</b>	<b>21</b>
7.1	Roles and Responsibilities for "Worksite management" .....	21
7.1.1	PECL Person in Charge (PIC) and PECL Permit Issuer (PI).....	21
7.1.2	Contractor's Permit Receiver .....	22
7.1.3	All Contractor Workers .....	22
7.1.4	Visitors .....	23
7.2	Camp Rules .....	23
7.3	General worksite safety rules .....	23
7.4	Permit to Work (PTW) .....	25
7.4.1	"External" Permits .....	25
7.4.2	Critical Scope Permits .....	25
7.4.3	Managing Permits .....	26
7.5	Incident and Unsafe Act (UA)/Unsafe Condition (UC) Reporting .....	26
7.5.1	Definitions.....	26
7.5.2	Prevention of unplanned events .....	27
7.5.3	Incident reporting .....	27
7.5.4	Incident Investigation .....	27
7.6	Personal Protective Equipment (PPE).....	27
7.6.1	PECL specific PPE related requirements: .....	28
7.6.2	PECL respiratory protective equipment (RPE) requirements (for welding activities):.....	28
7.7	Ground Disturbance .....	29
7.7.1	Overview .....	29
7.7.2	Planning/Work authorization .....	29
7.7.3	Competency .....	29
7.8	Energy Isolation.....	30
7.8.1	Blanking & Blinding .....	30
7.8.2	Lockout/Tagout (LOTO) .....	30
7.9	Fire prevention and ignition management.....	31
7.9.1	General .....	31

## Health, Safety and Environmental (HSE) requirement for CONTRACTORS

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7.9.2	Ignition Sources .....	32
7.9.3	Hot Work (Open Flame).....	32
7.9.4	Personal Ignition Sources.....	32
7.9.5	Control of Ignition Sources from Vehicles .....	33
7.9.6	Static Electricity .....	33
7.9.7	Bonding /grounding/fluid transfer .....	34
7.10	Preventative maintenance program and pre-use inspection for equipment, tools and machinery .	35
7.10.1	General .....	35
7.10.2	Tools.....	35
7.10.3	Mobile Equipment .....	35
7.10.4	Pressurized equipment rating.....	36
7.10.5	Rental equipment provided by PECL .....	36
7.11	Working Alone .....	36
7.12	Lifting and Hoisting .....	37
7.12.1	General .....	37
7.12.2	Certification, inspection and maintenance.....	37
7.12.3	Competency.....	37
7.12.4	Critical lifting operations.....	37
7.12.5	Working near High Voltage.....	38
7.12.6	Use of Man baskets and MEWP.....	38
7.12.7	Forbidden Lift Practices .....	38
7.12.8	Open Hook Restriction.....	39
7.12.9	Inclement Weather .....	39
7.12.10	Lightning Safety .....	39
7.13	Adverse Weather Conditions .....	39
7.13.1	Lightning Safety .....	39
7.13.2	Wildfire .....	40
7.13.3	Working in Heat and Cold Stress Condition.....	40
7.13.4	Heat Stress.....	40
7.13.5	Cold Stress .....	41
7.14	Workplace Hazardous Materials Information System (WHMIS-2015) / Global Harmonization System (GHS).....	41
7.15	Exposure Control Plan (ECP).....	41
7.16	Driving safety program.....	42
7.16.1	Assessment of Site Hazardous Areas: .....	43
7.16.2	Safe Loading and Unloading of equipment and machinery.....	43
7.16.3	Signaling and directing vehicles.....	44
7.16.4	Off Road Vehicle Safety (All Terrain Vehicles, Utility Vehicles and Snowmobiles) .....	44
7.16.5	Refueling Safety Requirements .....	44

7.17 Resource Road Rules.....	45
7.18 Recovery and Towing Requirements.....	45
7.19 Distracted Driving .....	45
7.20 Transportation .....	46
7.21 Occupational health management requirements.....	46
7.21.1 Fit for Duty .....	46
7.21.2 Fatigue management .....	47
7.21.3 Drug & Alcohol Policy .....	47
7.21.4 Disability Management Program .....	47
7.21.5 Communicable Disease/Pandemic Exposure Control.....	47
7.22 Environmental Protection & Management .....	48
7.22.1 Spill prevention .....	48
7.22.2 Water pump offs.....	48
7.22.3 Waste.....	48
7.22.4 Hazardous waste.....	48
7.22.5 The License to Transport .....	49
7.22.6 Biodiversity .....	49
7.22.7 Archeological .....	49
8. Master Glossary.....	49

## 2. Summary Statement

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"This Health, Safety and Environment (HSE) Requirements for Contractors" document, provides details of PETRONAS Energy Canada Limited (PECL or Company) Health, Safety and Environmental requirements for contractors providing services to PECL.

## 3. Objectives

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The intent of the HSE Requirements document is to provide clear direction and expectations for approved contractors that perform work on a PECL worksite. The HSE Requirements focuses on the HSE procedure, reporting requirements and polices that shall be followed to ensure successful and safe completion of work.

## 4. Scope

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This HSE Requirements document outlines key hazards and associated controls that may be present on PECL Worksites.

The scope of this document applies to all contractors who conduct work on PECL- owned and/or operated field sites, including contractors who use sub-contractors.

Additional requirements not outlined within this document may be identified to address work scope specific hazards and/or business function requirements.

Work scopes that do not require a contractor to send their employees or subcontracted workers to PECL field sites are not included within the scope of this document.

Note: this document does not apply to a Contractor that will "assume" Prime Contractor Responsibilities.

## 5. Definitions

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Capitalized terms used herein have their meanings set forth in the [Master Glossary](#).

Specific terms are used to indicate whether an action is mandatory or recommended. The following words have specific meanings:

- "Shall or Must" is used where an action is mandatory;
- "Should" is used where an action is recommended;
- "May" is used where alternatives are equally acceptable.



## 6. PART I - GENERAL HSE REQUIREMENTS

### 6.1 Compliance with Laws/Regulations/PECL Requirements

- The Contractor shall comply with all PECL Health, Safety and Environment (HSE) policies and any laws and regulations which are applicable to the PECL worksite where the work is being performed. Further to this, Contractors shall ensure that all Sub-Contractors associated with the Contractor maintain a similar level of compliance.
- Contractors safety programs or management systems shall define a process for identifying and complying with all applicable HSE regulations and must be made available to PECL on request.
- In the event of any conflict between any PECL HSE policies, laws, regulations and industry standards, the most stringent standard shall apply.
- Any noncompliance with PECL HSE policies, laws and regulations referred to in this section shall be reported to the PECL Contract Owner. In the event of serious or repeated noncompliance, an individual or corporation may be removed from PECL's approved contractor list and their engagement with PECL may be subject to termination.
- The Contractor should immediately report to the PECL Contract Owner, all written or verbal communications from government or regulatory bodies relating to the PECL worksite where the Scope of Work is being carried out.

### 6.2 PETRONAS Cultural beliefs

Everyone working at PECL worksites is expected to understand and support the PETRONAS Cultural Beliefs (PCBs).



The latest, detailed version of the PETRONAS Cultural Beliefs can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

### 6.3 Health, Safety and Environment Policy

Pursuing excellence in Health, Safety and Environment is the responsibility of all employees, contractors and subcontractors. PECL's operations and business activities shall respect the environment and provide a safe workplace for employees, contractors, consultants and the public to ensure that people go home safely.

PECL requires all employees, contractors and consultants to strictly adhere to PECL's HSE Policy at all times. The latest version of the policy and HSE Policy Statement can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

## 6.4 Upstream Process Safety Golden Rules

Contractor personnel are expected to operationalize the PECL Process Safety Golden Rules (PSGR) where applicable to their job tasks. The PSGR consist of eight (8) task-related rules established to strengthen operational discipline and address repetitive Process Safety non-compliances at site.

**Upstream Process Safety Golden Rules**











-  Stay within **Safe Operating Limit**. Respond immediately to alarms
-  Identify changes, raise **Management of Change**
-  Obtain approval for **Bypass of Safety Critical Protective Device**. Reinstate when it is safe
-  Conduct **Pre-Activity Safety Review** before start-up or shutdown
-  Line up **relief device** properly for live equipment
-  Maintain **Safety Critical Element** correctly
-  Report **Process Safety Observations** because I Care
-  **Be Competent**, Be Accountable to do it right


Internal

The latest version with additional details/explanation of the PECL Upstream PSGR can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

### 6.5 ZeTo Rules

Contractors are expected to comply with the PECL Zero Tolerance Rules ("ZeTo Rules").  
ZeTo Rules aim to ensure all high risk activities are carried out safely.

ZeTo Rules		ZeTo Rules	
	1. Work with a valid work permit (PTW) required by the job.		6. Use correct personal protective equipment (PPE) when handling hazardous chemicals.
	2. Verify energy isolation before starting work.		7. Obtain authorization before excavation or entering a trench.
	3. Obtain authorization before overriding or disabling safety critical equipment.		8. Do not position yourself under a suspended load.
	4. Obtain authorization before entering confined space.		9. Do not smoke outside designated areas or bring potential ignition sources into process areas without authorization.
	5. Protect yourself against a fall when working at height.		10. Do not use your mobile phone/ walkie-talkie while driving, follow the speed limit and use your seat belt.



The latest version of the PECL "ZeTo Rules" can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

### 6.6 Workplace Harassment, Bullying & Violence Prevention Policy

PECL is committed to providing a safe, healthy and respectful workplace free from violence (actual, attempted or threatened), harassment and bullying. Harassment, bullying or violence in any manner or form is expressly prohibited by PECL. If it is not possible to eliminate the hazards of harassment, bullying and violence, PECL is committed to controlling those hazards. PECL will take such disciplinary measures, up to and including termination of employment for cause, as it deems appropriate against any person under its direction who subjects anyone to harassment, bullying or violence.

In this policy, workplace harassment includes but is not limited to the following:

- Engaging in any single incident or repeated incidents of objectionable, unwelcome, inappropriate, vexatious, demeaning and/or embarrassing comment or conduct against a person that objectively causes or ought reasonably to be known would cause offence, humiliation, or adverse effects to a person's health or safety;
- Personal harassment; and
- Bullying, discriminatory harassment and sexual harassment.

Workplace harassment, bullying and violence are serious matters and this policy requires incidents to be reported. Accordingly, PECL does not permit retaliation or harassment of any kind against individuals who

make good faith complaints or have provided information in good faith regarding an actual or potential incident of workplace harassment, bullying or violence.

In this way, a complainant under this Policy should be treated in a similar manner as a Whistleblower under the Whistleblower Policy. For greater certainty, neither PECL nor any representative of PECL may discharge, demote, suspend, threaten, harass or in any manner discriminate against such individuals or encourage an individual to accept improper behavior or avoid reporting an incident. Any person that reasonably believes they have been subject to such prohibited actions should submit a report in the manner provided in section covering the Whistleblower Policy.

The latest/full version of the policy can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

### **6.7 Whistleblower Policy**

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This Whistleblower Policy sets forth PECL's requirements for its commitment to ethical business practices and a work environment that fosters mutual respect, open communication and integrity, consistent with the expectations and plans of PECL, and in consideration of PETRONAS Global requirements. This Whistleblower Policy will be undertaken to manage risks to PECL, ensuring compliance with applicable law and PECL's policies, standards, Frameworks and guidelines.

PECL encourages all Employees, Contractors, and Consultants who are performing work for PECL, and other stakeholders who are impacted by PECL's business, to speak up and proactively raise their concerns about actions or perceived actions that do not appear to be in accordance with the responsibilities outlined in this Policy, or any other PECL Policy.

Prior to submitting a Whistleblower complaint, Employees, Contractors and Consultants should consider other alternatives, such as talking to a Supervisor or the Legal department to determine if there is a more appropriate way to address the concern.

Whistleblower complaints may be submitted to the Whistleblower's immediate Supervisor, Vice President or the Legal department through one of the following confidential means of communication:

- In writing: PETRONAS Energy Canada Ltd.(1600,215–Second Ave. SW, Calgary, Alberta,Canada,T2P 1M4 )- Attention: [General Council, Vice-President];
- By electronic mail to the Legal Department: [integrity@petronascanada.com](mailto:integrity@petronascanada.com);
- By telephone: EthicsPoint Compliance Hotline (North American Toll Free 1-855-696-4386)
- By website: File a web-based report directly at [www.ethicspoint.com](http://www.ethicspoint.com). Note - reports filed through this website are anonymous and cannot be tracked back to the Whistleblower.

Any complaint should provide sufficient, precise and relevant information pertaining, among others, to individuals, dates, places, names, witnesses, numbers, actual or potential violations, so that a reasonable investigation can be conducted.

The latest/full version of the policy can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

### **6.8 Contractor Prequalification & ISNetworld (ISN)**

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The objective of pre-qualification is to screen potential Contractors to verify that they have the necessary experience, safety record and competence to undertake the Scope of Work. This ensures they have the effective policies and procedures in place to manage associated risk when performing the work on PECL worksites.

Contractors are expected to maintain "Acceptable" grade status within ISN.

The HSE Pre-Qualification requirements will apply to any Contractor who will perform work on a PECL worksite.

### 6.8.1 ISNetworld (ISN)

PECL uses ISNetworld (ISN) to evaluate, prequalify, and monitor all applicable contractors working at PECL worksites. Prospective and current contractors are required to:

- Sign up for an ISN account at [www.isnetworld.com](http://www.isnetworld.com);
- Manage their ISN account to ensure they meet PECL's prequalification requirements, including:
  - Providing proof of a Certificate of Recognition (CoR) within ISN;
  - Carrying the appropriate insurance including Workers Compensation Board (WCB) coverage in the Province of BC. Vendors exempt from having to carry WCB in BC due to interprovincial agreements or other reasons are required to apply for an exemption;
  - Submitting Quarterly/Annual Questionnaire Updates within the specified timeline;
  - Submit the required KPI information at specified intervals as outlined in the PECL Contract (as required)

Failure to submit the necessary updates (CoR, Insurance, WCB, Quarterly/Annual Questionnaire Updates) will negatively impact scores and could result in a grade change for PECL connected contractors from "Acceptable" to "Not Acceptable".

"Not Acceptable" status could result in a suspension of work activities for such contractors and disqualification from future work scope considerations.

### 6.8.2 HSE Contractor Mitigation

If identified through the evaluation process or while a contractor is actively performing work for PECL that the Contractor does not have a passing grade in ISN ("**Acceptable**" **Grade**), an HSE Contractor Mitigation Plan will need to be developed and approved:

- Prior to start of work for new Contractors or
- Within an established timeframe to allow continuation of the existing work scope.

The PECL Contract Owner, in collaboration with Contractor Representatives and with support of a PECL HSE Representative, will build the HSE Contractor Mitigation Plan. The final Mitigation Plan shall be reviewed and approved by a Manager/Team-Lead, Director and VP of that business group and the Head of Health, Safety & Security /Delegate prior to the contractor beginning or continuing work on a PECL worksite.

The HSE Contractor Mitigation Form must identify the following:

- Basic Information like the name of the Contractor, date form is being completed, services provided and work location;
- Current ISN grade/score;
- ISN identified gaps;
- Reason to use the Contractor;
- A review of other qualified Contractors in ISN with their current scores; and
- List any additional controls that shall be put in place to ensure the deficiencies identified in "ISN identified gaps" are adequately controlled.

Contractors who require a mitigation are required to provide the Company with:

- A commitment letter;
- A corrective action plan with target dates in compliance with the HSE Contractor Mitigation Form;
- Supporting documentation as it applies to the associated identified gaps.

Contractors that are on an approved and active HSE Contractor Mitigation Plan will be identified on their ISN dashboard by a yellow flag beside the assigned grade. During this time, a copy of the approved HSE Contractor Mitigation Form will be attached to the Contractor's profile with notes for the Contractor to review.

Duration of the mitigation must be determined and documented within the HSE Contractor Mitigation Form. Compliance to the mitigation plan conditions will be assured by the Contract Owner with the support from HSE team at least every 6 months.

### 6.9 Contractor's HSE Plan

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Select Contractors may require an HSE Plan. This requirement will be specified by PECL during pre-qualification or in the execution phase of the Contract.

The Contractor's HSE Plan, at the minimum, shall demonstrate the following:

- The hazards and known HSE issues associated with the Scope of Work have been identified, assessed and will have control and mitigation measures in place;
- The organization structure for the Scope of Work has adequate resources;
- There are competent personnel, supported by structured training programs to manage HSE hazards;
- There is a process to assess sub-Contractor capability and resources;
- The responsibilities for the implementation and maintenance of all control and mitigation measures are assigned to identified Workers throughout all phases of the Scope of Work;
- Risks have been assessed and measures taken to reduce the risks to ALARP;
- The interfaces between the Contractor and sub-Contractors are clearly defined;
- The availability of the critical procedures (e.g. permit to work, job hazard assessments, safe operating procedures, emergency response plans, etc.) and controls to achieve the objectives of the Scope of Work without compromising HSE performance;
- Identification of reportable KPI's related to the work activities performed on PECL sites.

Contractors shall submit their HSE Plan to PECL for review by the date requested by the Contract Owner. PECL may request that Contractor develop control and mitigation measures to achieve compliance with the Plan. This is subject to the approval PECL. PECL may prescribe control and mitigation measures to ensure the contractor achieves compliance with the plan.

### 6.10 Sub-Contractor Management

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#### *6.10.1 Sub-Contractor Approval by PECL*

The use of **Sub-Contractors** may be subject to approval by the Contract Owner/Supply Chain - such requirement will be communicated to the vendor through the bidding and contract issuing process. In which case contractors must clearly identify if they require the use of Sub-Contractors during the pre-qualification process and get the prior written consent of PECL to use specific subcontractors.

Contractor must provide at least 48 hours prior written notice to PECL of its proposed use of a Subcontractor, which notice shall include details regarding the Subcontractor as PECL may request.

Prior to granting such consent, PECL may require the Contractor to meet some specific conditions as it deems necessary regarding any Sub-Contractor use (for example as providing copies of the Sub-Contractor's certifications and qualifications)

**Contractor shall ensure that Subcontractors do not further subcontract any portion of the Work without PECL's prior written consent**

#### *6.10.2 General PECL expectation*

PECL's expectations related to subcontractor management includes the following:

- The Contractor shall remain responsible/accountable for and liable for, the performance of the Work and the fulfillment of the terms of this Agreement, notwithstanding the provisions of any Sub-Contract between Contractor and its Sub-Contractor;
- Any acts or omissions of the Sub-Contractor shall be deemed to be acts or omissions of the Contractor;
- The Contractor shall ensure that the Work is performed by qualified Sub-Contractors in accordance with the terms of the signed MSA (Master Service Agreement);
- The Contractor shall ensure the Sub-Contractor's compliance with the PECL policies, standards, procedures, guidelines and health, safety and environmental requirements including provision and maintenance of training certification, and, to the extent practicable, are currently designated as "qualified Contractors" by PECL;
- The Contractor shall ensure that its Sub-Contractors carry and maintain and provide proof of insurance equivalent to the Contractor's Insurance as required in the MSA, and shall provide such to PECL upon request;
- The Contractor shall ensure that, where practicable, its relationship with all Sub-Contractors is governed by a written agreement in respect of the provision of the Work in accordance with the provisions hereof, and agrees to provide to PECL a copy of such agreement upon request;
- The Contractor shall ensure that Sub-Contractors do not further subcontract any portion of the Work without PECL's prior written consent;
- PECL, at its sole discretion, at any time prior to or during the performance of the Work, may refuse to allow the Contractor to use or continue to use any Sub-Contractor to perform the Work.
- Contractor is responsible for all communications about the hazards and risks of the work/worksites to the Sub-Contractor(s);
- Contractor is responsible for clear communication of both PECL and the contractor's health and safety requirements, including incident/Unsafe act (UA)/Unsafe condition (UC) reporting.

### **6.11 Contractor's H&S program & performance verification**

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Contractors are required to conduct periodic assurance activities to evaluate both the compliance to and degree of effectiveness of their health and safety management systems, supporting programs and tools. This allows contractors to determine the level of compliance with both external regulatory requirements, as well as those requirements that are internal to the contractor's health and safety management systems. In addition to confirmation of compliance, assurance activities provide a mechanism for continuous improvement.

### **6.12 Contractor's Kick off meetings, KPI reporting and Performance reviews**

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#### *6.12.1 Kick Off meeting*

Upon request by PECL, the Contractor shall participate in a PECL led Kick off meeting (to assist with onboarding of new Contractors, prior to start of new projects or work scopes etc.).

#### *6.12.2 KPI Reporting*

PECL may require contractors to submit their (and their subcontractor's) KPI's related to the work activities performed on PECL sites. The mechanism of reporting and the frequency of the reporting will be specified by the Contract Owner or the on-site PECL Person In Charge (PIC) or designate. The KPI's will be a combination of leading and lagging indicators.

#### *6.12.3 HSE Performance Review*

Upon request by PECL, the Contractor shall participate in PECL's led Contractor HSE performance reviews.

## 6.13 Work stoppage and removal of contractor personnel

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### 6.13.1 General

All employees, contract staff, contractors and sub-contractors have the right to refuse and are responsible for stopping an on-going activity/task if there is an unsafe act or condition identified that can endanger oneself and/or others, or cause adverse impact to property or the environment ("the right to refuse the unsafe work" is one of the fundamental worker right/obligations under BC and Canadian OH&S Regulations).

The work stoppage process shall involve the following steps: stop, notify, investigate, correct, resume and follow up approach for the resolution of a perceived unsafe work action or condition.

Work stoppages executed by contractor Personnel on PECL locations/sites, shall be reported to the PECL PIC or designated representative.

Situations that may warrant a Stop Work could include, but are not limited to the following:

- Change in work conditions/hazard control measures;
- Changes to Scope of Work or work plan;
- Non-compliance to established work procedure;
- Improper use of equipment;
- Equipment unavailability, malfunction/failure that may impair the safety of the activity;
- Incident/situation that may endanger the person(s), equipment or the environment if the activity/task be continued;
- Unsafe conditions;
- Unauthorized work or expiry of PTW or other documents;
- Specified safety measures not fully implemented; and
- ZeTo rule violation.

The PECL representative or their designated representatives shall have the right to prohibit commencement of work or to stop any work in progress if the equipment, machinery, personnel or work conditions are considered at PECL's discretion to be unsafe or not to be in compliance with any applicable rules, regulations and procedures in PECL.

At the request of PECL, the contractor will remove from any PECL worksite any personnel not properly observing or complying with the health and safety responsibilities described in this document.

### 6.13.2 Worker and visitor responsibility

Safety is everyone's responsibility.

- If workers are asked to perform work that they feel is not safe or they are not competent and trained in, the worker has the right/obligation to refuse that work and they shall report and discuss alternatives with their Supervisor;
- Visitors observing a situation that warrants stop work, shall communicate to their host, who then shall initiate the work stoppage.

**By law, employers are prohibited from penalizing workers for raising a health and safety issue.**

## 6.14 Worker competency requirements

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Contractor workers and Supervisors shall be trained, competent, qualified and certified to perform the task they have been assigned. A contractor's HSE program shall include details on how worker competence will



be assessed including a process to record any competency assessments and training opportunities identified and closed out, with established refresher training intervals.

Contractors are expected to document certification, training, and on-the-job training that was required and received by their workers and subcontracted workers. Training Certificates and competency records shall be provided where applicable.

Contractor's Supervisor training and competencies shall align with recognized industry best practices.

### **6.15 Worker orientation and training requirements**

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The following orientations are the minimum requirement. These orientations will be completed prior to workers commencing work.

#### *6.15.1 Common Safety Orientation (CSO)*

All Contractor workers must complete the Common Safety Orientation through Energy Safety Canada prior to reporting to a PECL site to conduct work activities.

#### *6.15.2 PECL Site Specific Orientation*

All Contractor workers must receive a "PECL Site Specific Orientation" in accordance with the PECL Worksite Management Framework before commencing work.

Workers must review the following site specific arrangements upon arrival to PECL worksite:

- Location of Muster Points;
- Location of fire extinguisher/ eye wash & emergency shutdown;
- Location of AED and first aid kit;
- Location of smoking areas;
- Site Specific emergency response plan(ERP);
- Other location specific info.

#### *6.15.3 Training Requirements*

At a minimum, workers must have the following valid tickets on their person, while working on PECL worksite:

- WHMIS;
- TDG;
- H2S Alive.
- FIRST AID with CPR and AED (BC Level 1 or Equivalent) - First Aid course must be completed in BC or have a BC Jurisdiction on their certificate. If course was taken it in AB, worker can apply for BC jurisdiction to be added (for a fee and additional training).

Other Task-specific training as required:

- Bonding and Grounding.

Contractor's workers who perform work activities where the transfer of flammable and volatile fluids occurs (i.e. Produced Water, Condensate, Zero Entry Tank cleaning, etc.) must be trained and competent in grounding and bonding through a recognized Corporation such as DETAC, including the process of ensuring a ground or bond is effective prior to work commencing.

- Confined Space Entry Training:

All confined space work will be completed by workers trained in the specific hazards and controls associated with the job task they are to perform including but not limited to spark watch, hole watch, supervisors and workers entering to perform work.

- Fall Protection:

Contractor's workers working at or above 3 meters (10 feet), without appropriate guardrails in place or below 3 meters (10 feet) where a fall can result in injury will be trained in the use of fall protection equipment according to the manufacturers specifications and be familiar with the care, use and limitations of the required PPE.

- Mobile Equipment (i.e. Zoom Booms, Forklifts, Cranes, Picker Trucks):

Contractor's workers operating mobile equipment must be trained and certified for the particular equipment they will be using and/or operating.

- Aerial Lifts (i.e. Scissor Lifts, Man lifts, Man Baskets):

Contractor's workers operating an aerial work platform will be trained for the particular size of equipment (Based on Reach). Prior to receiving the aerial training, the worker must receive "Fall Protection" training.

- Arc Flash training – Required if performing work on high voltage systems.
- Trades Tickets

Contractor workers must be trained; qualified and certified through a recognized authority to perform the task they have been assigned. This includes but is not limited to electrical, instrumentation, mechanical, crane operator etc.

### 6.16 Young/New/Inexperienced workers program

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BC Occupational Health and Safety Regulation defines a "young worker" as any worker under age 25.

A "new/inexperienced worker" can be any age and includes those who are new (normally with less than 6 month experience) to industry, contractor or current role (includes experienced worker with recent promotions to the new role).

**All Contractors are expected to inform the PIC/PECL representative of all new, young, inexperienced and new to PECL workers on PECL locations, including % of such workers on their respective crews.**

A contractor's HSE program shall include a New, Young and Inexperienced workers program that includes:

- Definition of New/Young/Inexperienced worker appropriate to risk and role (know your rights/responsibilities & know the rules);
- Defining the length of time a person is considered a New/Young/Inexperienced worker and what is the process of graduating that worker from the program (through competency verification or other similar process);
- Requirements for appropriate health and safety training (as determined by hazard assessment) for worker and mentor;
- Expectation on mentoring and effective supervision at the worksite;
- Requirement for New/Young/Inexperienced workers to be visually identified (by uniquely colored hardhats/vest or another type of identifier);
- Requirement that subcontractors must adhere to the Contractor's requirements for New/Young/Inexperienced worker.

**For more information see:**

- Energy Safety Canada's - [Green Hands for Green Hands](#)
- WorkSafe BC's - [Young and New Workers](#)
- Government of Alberta's - [Young Workers](#)

## 6.17 Hazard and Risk Management

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### *6.17.1 Hazard Identification and Control*

Contractor shall have hazard identification procedures used to systematically identify, control, mitigate or eliminate potential or actual hazards. Hazard identification and control will follow the hierarchy of controls to eliminate and/or control hazards:

The following hierarchal approach to establishing controls for risk reduction shall be followed:

1. **Elimination**- complete removal of a hazard;
2. **Substitution**- replacement of one part of an activity, process or design by another that is inherently less hazardous;
3. **Engineering Control**- a system that controls a hazard so that the consequences are minimized or removed;
4. **Administrative Control** - action taken or systems that reduce the consequences of a hazard; and
5. **Personal Protective Equipment (PPE)**: the use of PPE shall be considered a last line of defense for risk reduction.

Elimination of a hazard must be considered before substitution, engineering control, administrative control, and PPE in that order. Emergency response includes risk reduction through action such as removal of persons from the place of danger, prevention of escalation, etc.

### *6.17.2 Initial assessment of the Project HSE risks*

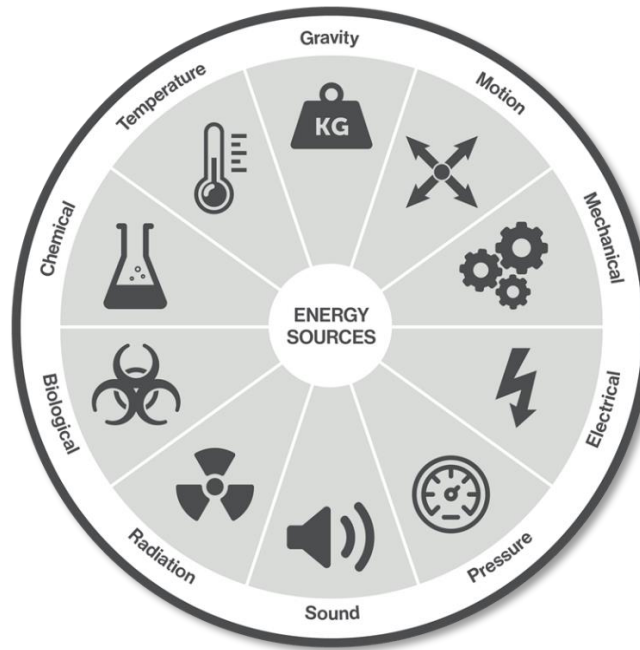
Contractor shall make an initial assessment of the HSE risks i.e.: (Health, Safety, Industrial Hygiene, Occupational Health, Environment, Product Stewardship, etc.) involved in the execution of the work. The focus of the assessment should be to evaluate the inherent hazards in conducting the work scope (including examining accessibility, surface conditions, utilities and weather associated with work location) and the potential adverse consequence of an accident to the workers, the public, the environment, the company assets and reputation.

Contractor shall take appropriate preventive and mitigation measures to prevent incidents from occurring and to minimize the consequence of an event should it occur. Such a risk and information can be included and become a basis in developing Project HSE Plan, if required.

### *6.17.3 Energy Based Hazard Identification program and Energy Wheel*

PECL has adopted The Energy Wheel as a tool that uses standardized symbols to provide users with a mental cue and create associations with potential energy based hazards.

The Energy Wheel helps to add structure and strategy to tailgate meetings and JHA reviews by reminding workers to think about Energy Based Hazards, especially those that might not come to mind naturally.



#### 6.17.4 ToolBox/pre-job safety meeting

Prior to all work activity, a toolbox/pre-job safety meeting is to be held with all workers performing work facilitated by a competent Contractor's Supervisor or worker.

The meeting must include a discussion or review of the following:

- The site/job area specific characteristics and hazards;
- Job steps and the hazards involved as required by the appropriate Standard, SOP or JHA;
- Atmospheric conditions and physical hazards as applicable;
- Communication methods and PPE to be used;
- Equipment and tools needed for the work;
- Exposure limits, test frequency and testing requirements for oxygen, carbon dioxide, toxic gas, and explosive atmospheres, as applicable;
- Potential toxic effects of any contaminants and a Safety Data Sheet (SDS) review;
- Requirements of site Emergency Response Plans (ERP);
- SIMOPS or other concurrent activities.

The Tailgate Safety Meeting must be documented to verify that safe work discussions have occurred prior to conducting work.

#### 6.17.5 Job Hazard Assessment (JHA)

Prior to performance of WORKS, Contractor shall implement a Job Hazard Assessment Form (JHA) (or other type of document that meets the intent of following requirements- e.g. JSA) as a safety precaution to eliminate or guard against hazards of a specified job. The JHA shall include the site /work scope related specific hazards and their associated mitigations and controls. JHAs may be completed on the Contractor JHA form, a PECL JHA form can be used if needed to meet the intent of below.

The typical JHA methodology should include the following steps:

1. Study the job and develop basic job steps;
2. Identify the hazards for each job step;

3. Identify the safety precautions and mitigation measures to be taken for each job step;
4. Record the JHA and confirm that all workers involved understand the hazards, precautions, mitigations and their specific responsibilities during execution of the work activities.

In addition to a JHA, a Standard Operating Procedure (SOP) may be required for critical scope activities, as per PECL's WSM and Permit to Work (PTW) Frameworks.

### *6.17.6 Managing changes at work*

If an activity captured under the JHA can't go as planned, and job scope change occurred, there will be a need to pause and reassess the hazards/controls. It may be required to revise the original JHA and associated Permit to work, to ensure any new or additional hazards are captured.

If a significant job scope change occurs, the worker must complete a new JHA and review with the Permit Issuer for permitted activities. In this case, a new PTW may be required in accordance with PECL's Permit to Work Framework (see the section below with additional details on PTW).

### *6.17.7 HSE Inspection/Audit*

Prior to commencement of work, Contractor is required to inspect the worksite and equipment to ensure that WORKS can be performed safely.

The intent of Inspections are as follows:

- Identify and to ultimately control and/or eliminate potential and existing hazards;
- Highlight hazards that require immediate action; and
- Ensure HSE Management Controls are sufficient and being followed.

In addition, Contractor shall perform regular HSE inspection/audits throughout the WORKS and shall promptly implement all recommendations made pursuant to the said inspection/audit.

- All corrective actions shall be documented and, depending on risk, addressed accordingly.
- A copy of formal and informal HSE Inspections will be provided to the PECL PIC.
- PECL shall have the right to conduct its own HSE Inspection/audit at the work site. Contractor shall comply with all recommendations arising from such Inspection/audit.

## **6.18 Emergency Response Preparedness**

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Contractor shall ensure adequate emergency response capability for their own personnel, which shall include at least the following:

- Emergency response procedures and plans including medical emergency response;
- Periodic drill / exercise program ;
- Trained and competent personnel;
- Fire/wildfire management and response procedures;
- Safety and lifesaving equipment available and in place to effectively manage the identified emergency.

PECL is responsible for worksite Emergency response Plan (ERP) that includes Medical Evacuation (MEDEVAC) arrangements - they can be developed by PECL or Contractors (but must be approved by PECL PIC).

PECL shall ensure that all Contractors shall be made aware of ERP requirements at the worksite.

Contractor shall regularly conduct emergency response drills (and additional drills required under provincial regulations) in order to ensure adequacy of the ERP and competency of emergency responders. After conclusion the drill, the lesson learned from such drills shall be reported to PECL PIC.

Contractor shall also ensure its designated first aiders are trained and competent to render such services as per the applicable provincial regulatory body.

Contractor personnel shall be trained and competent in the use of wildfire “firefighting hand tool equipment”(e.g. shovel, pulaski axe or fire water can) and in managing and responding to the emergency.

With regards to any emergency, Contractor shall treat all evidences including photos as confidential and these evidences shall not be shared, disseminated with other individuals and/or published in any media.

### 6.19 Security

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Security is everyone’s responsibility:

- If you see or become aware of a security concern - safely “own it.” Safely observe, make some notes and report it;

Reporting Security Incidents: Ensure all security incidents are reported to your supervisor as well as through the PECL 24HR Emergency Line at 1-844-299-2566 (select #2).

## 7. PART II - SPECIFIC HSE REQUIREMENTS

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### 7.1 Roles and Responsibilities for “Worksite management”

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“Work Site Management” framework outlines the requirements to effectively manage and control all work scopes on PECL worksites.

#### 7.1.1 PECL Person in Charge (PIC) and PECL Permit Issuer (PI)

The PIC and the PI may be the same person, if this is the case, that person must comply with the responsibilities of both roles.

**PECL Person in Charge (PIC) and PECL Permit Issuer (PI)** is always a PECL employee or consultant, acting on behalf of PECL in a supervisory capacity, assigned by PECL Management.

- *PECL Person in Charge (PIC)*

The PECL Person in Charge (PIC) has the overall responsibility for coordinating HSE during work activities on a PECL worksite unless, the Prime Contractor responsibility has been transferred to another party.

The Person in Charge must coordinate work activities of all Workers at the worksite, but does not direct or instruct individual or specific work activities.

The Person in charge must ensure that Workers conduct work activities according to existing ZeTo rules, Isolation Assessment Form, Safe Operating Procedures (SOP), and document a JHA detailing the job steps, the hazards identified and the risk elimination, control or mitigation actions required.

- *PECL Permit Issuer (PI)*

PECL Permit Issuer (PI) issues a permit to The Contractor’s Permit Receiver.

The Person in Charge or Permit Issuer will review all JHA’s based on work scope, assess the identified risk, effectiveness of mitigations, and provide feedback on any deficiencies found within the JHA prior to any work commencing.

Where applicable, the Person in charge or Permit Issuer will decide that a JHA is inadequate and must be redone prior to work commencing.

### *7.1.2 Contractor's Permit Receiver*

The Contractor PR (Permit Receiver) is directly responsible for Health, Safety and Environment (HSE) during work activities on a PECL site for their workers and sub-Contractors. The Permit Receiver can be also fulfilling the role of the worker on a single worker activity.

In addition to worker responsibilities the Contractors Permit Receiver must:

- Coordinate with the Permit Issuer on the requirements of the PTW;
- Lead a tailgate safety meeting with Workers under their supervision that are involved in the permitted task, outlining the expectations of the work scope, JHA, applicable SOP's, Site Specific Hazards, Field ERP, PTW and all other pertinent documents;
- Ensure that workers have applied a personal lock and tag onto the associated lockbox for the isolated equipment prior to the work being conducted, in accordance with the Lockout Tagout Framework;
- Identify and discuss the work activities with the PECL Permit Issuer based on the identified, documented and approved job scope prior to creating the JHA;
- Lead and/or develop a robust JHA, as defined by the Worksite Management Framework;
- Ensure that all Safe operating procedures (SOP's) pertaining to the work scope are available and workers are trained to the requirements there in prior to work commencing;
- Confirm all required safety equipment including PPE being used for the work scope is in good working condition, and workers are trained in its use, care and inspection as per manufacturers specifications prior to the start of the job task;
- Review the expectations of the JHA and PTW with all Workers and Sub-Contractors involved in the work scope;
- Outline additional PPE as required in the PTW or Exposure Control Plan (ECP);
- Follow all requirements for permitting in accordance with the Permit to Work Framework;
- Stop on-going activity/task if there is an unsafe act or unsafe condition that can endanger oneself and/or others or cause adverse impact to property or the environment;
- Prior to leaving a work site, if required through the risk assessment, the Permit receiver must identify a competent and qualified Worker that will assume the role of Permit receiver to oversee the work scope; and notify the Permit Issuer prior to leaving the worksite while work is being performed by those under their supervision;
- Coordinate the specific activities that will be performed by those under their supervision, according to the PTW;
  - Clear worksite and return it to a safe condition once the work is completed.

### *7.1.3 All Contractor Workers*

All Contractor workers (including Contractor Permit Receiver) must:

- Prior to reporting to a PECL site to perform work, complete the online Common Safety Orientation (CSO) through Energy Safety Canada (ESC) and present documented proof of completion to the Permit Issuer or their delegate;
- Provide proof of valid safety training tickets for H2S Alive, BC Level 1 First Aid with CPR/AED (or equivalent), WHMIS and TDG;
- Attend a "PECL Site Specific Orientation";
- Be trained and competent for the job task and where specialized training is required for a work activity (i.e. Confined Space, Lifting, Ground Disturbance...etc.), the worker must have a current and valid training ticket;
- Stop on-going activity/task if there is an unsafe act or unsafe condition that can endanger oneself and/or others or cause adverse impact to property or the environment;
- Participate in the isolation verification walk down, the completion and approval of the Isolation Assessment Form in accordance with the Worksite Management Framework;
- Apply a personal lock and tag onto the associated lockbox for the isolated equipment prior to the work being conducted, in accordance with the Lockout Tagout Framework where applicable;

- Lead and/or develop a robust JHA, as defined by the Worksite Management Framework;
- Ensure that all applicable Safe Operating Procedures (SOP) where applicable are identified, reviewed and readily available on site prior to the start of the job task;
- Comply with all HSE requirements and safety expectations identified in the PECL Contractor HSE Requirements document;
- Participate in the daily pre-job meetings and other related meetings;
- Maintain good housekeeping in the work area(s);
- Ensure all Incidents , Near Misses , Unsafe Acts (UA), and Unsafe Conditions (UC) are reported to their supervisor;
- Comply with the applicable regulations;
- Comply with the Contractor's Drug, Alcohol and Cannabis Policy;
- Cooperate and support with, or participate in incident investigations as required;
- Understand and follow PECL's and Contractor's ERP (Emergency Response Plan);
- Wear appropriate PPE (Personal Protective Equipment) for the task at hand;
- Complete equipment inspections including pre use, where required and as per manufacturer specifications.

### 7.1.4 Visitors

Visitors must always be escorted while on a PECL operations site.

Visitors must:

- Report to the site security office/gate before entry;
- Participate and comply with environmental and safety directives, i.e. a Review of the Visitor's Orientation Checklist;
- Comply with the PECL Contractor HSE Management requirements where applicable.

## 7.2 Camp Rules

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PECL has established Camp Rules to ensure a safe, pleasant and comfortable environment for everyone staying in, visiting, and working at a PECL Camp (includes private camps and open camps) where Contractor workers are staying.

Acceptance of these Camp Rules is a condition of access and use of a PECL Camp.

The latest version of the Camp Rules can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

## 7.3 General worksite safety rules

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- No personnel shall enter a PECL Worksite without signing in (through an approved and agreed upon process), acknowledging the Site-Specific Orientation (which includes a review of daily hazards);
- A JHA (Hazard Assessment) and Pre-job (Tailgate) Safety Meeting must be completed and documented before all tasks;
- All High-Risk work must have an SOP (Safe Operating Procedure) before starting work.
- All personnel must be equipped with the approved PPE that is inspected as per manufacturer specifications and used at all times where required;
- **All personnel shall be clean-shaven when working on PECL locations (ref. ENFORM Facial Seal bulletin 03/29/2012);**
- **Hoodies are not permitted to be worn at any time on a PECL worksites;**
- Hearing protection is required in any building or area where noise levels are at or above 85 decibels. e.g., Compressor buildings, generator buildings and air compressor buildings. Double hearing protection may be required in certain circumstances;



## Health, Safety and Environmental (HSE) requirement for CONTRACTORS

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- PECL building entry practice must be followed when entering buildings. Ensure no ignition sources are brought into the building, i.e. Lighters, non-intrinsically safe equipment, cell phones, etc. All process buildings on site are equipped with fixed gas detection monitors and must be checked before entering any building;
- Smoking and vaping (this also includes the carrying of lighters, matches and vape pens) is prohibited in all areas except in the designated areas—review smoking areas when checking in;
- Work areas must be kept neat, tidy, and organized safely;
- Prior to leaving for breaks, including lunch, coffee, etc., work areas must be secured to ensure all potential hazards are mitigated;
- The worker's responsibility is to see that any combustible materials, i.e., rags, paints, cleaning fluids, etc., are not left where such materials could ignite;
- All non-intrinsically safe equipment (i.e. cameras, cell phones, tablets, PDA's...etc.) use on-site is not permitted unless properly authorized by PIC/PI/PECL Supervisor (through the Worksite Management Framework and Permit to Work Framework processes);
- The possession or use of alcohol, cannabis or illicit drugs on any PECL property is prohibited. No person, while under the influence of drugs or alcohol, is permitted on site.
- Workers shall be able to meet the physical demands of their job and have had sufficient rest beforehand;
- Firearms and ammunition will not be permitted on any PECL site without the approval of PECLPIC;
- All vehicles travelling within the plant site shall not exceed 15 km/hour or the posted limit, whichever is less;
- All traffic signs, road rules must be strictly adhered to;
- All doors, walkways, exits and stairways must be kept clear at all times;
- Immediately report any medical or first aid incidents to a PECL team member. The location of the AED and first aid kit will be reviewed when checking in;
- Regardless of the severity, all spills must immediately be reported to the PECL Person in Charge (PIC) or delegate so they can be controlled, cleaned up, and disposed of ASAP;
- Blowdowns can occur as part of our operations. You must assemble at the "MUSTER AREA" unless otherwise directed by a PECL representative;
- If indicated on the lease entry sign this may be a sour facility equipped with H2S detectors in key areas throughout the facility. Workers shall adhere to all of their company Safe Operating Procedures when the potential exists for exposure to H2S.
- This site may have wind socks set throughout the facility to allow you to observe the wind direction. In the event of a gas release, take note of the wind direction, and move to muster points accordingly—review wind sock locations when checking in;
- If the emergency air horn sounds at any time, all workers must move to the appropriate "MUSTER AREA" immediately;
- FIRE EXTINGUISHER / EYE WASH & EMERGENCY SHUTDOWNS. Workers must be familiar with the nearest location and its use. If any of this equipment is used, it must be reported to the PECL Person in Charge or delegate immediately. Review locations when checking in;
- NO CRITICAL WORK shall commence without a permit to work. This includes but is not limited to:
  - Hot Work;
  - Confined Space Entry;
  - Critical Lift;
  - Bypass of Safety-Critical Devices; and
  - Ground Disturbance
- Valves, Critical Safety Protective Devices and all other controls on PECL assets must not be operated unless approved by the PIC/PI;
- Contractor(s) shall provide their own personal lock when involved in a group lockout (personal locks must be uniquely keyed). Workers shall remove their lock once completing the task or before leaving the site;
- Before proceeding with any ground disturbance activities (i.e. digging, excavation, trenching, ditching, hydro-vac-ing etc.), the PECL Person in Charge or delegate must be notified, and the activities will follow PECL Ground Disturbance Standard as well as any regulatory requirements;

- During critical lifts, the work area must be controlled at all times (e.g. ribboned off);
- Taglines must be used on all lifts except when multiple cranes hoists are used;
- Tools and equipment cannot be modified, or safeguards altered or removed unless proper authorization/approval is received;
- Running is considered unsafe, except in cases of extreme emergency;
- Horseplay, or "fooling," or any other act that may distract others is prohibited;
- Conduct such as harassment, gambling, loitering, sleeping, stealing etc. on the job site will not be tolerated.

### 7.4 Permit to Work (PTW)

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PECL permit requirements are outlined in The Permit to Work (PTW) Framework.

See below a high-level overview of the process for all permitting activities.

#### 7.4.1 "External" Permits

Prior to any work beginning, All Contractors are required to obtain an "external" permit to work.

- Each Contractor must identify a Permit Receiver (PR) who will be responsible for ensuring Worker(s) under their supervision conduct work in accordance with the Permit to Work PTW (i.e. lead of a wireline crew);
- The Permit Receiver can be a worker or Supervisor from the Contractor company performing the work scope;
- The Permit Receiver will sign to acknowledge and endorse the PTW.
- The Person in charge (PIC) and the Permit Issuer (PI) may be the same person and will assess the risk associated with each Contractor performing work;
- Additional or identified work that falls under a Critical Scope, as defined in this Permit to Work Framework as well as below, will require individual PTWs.

#### 7.4.2 Critical Scope Permits

A critical scope PTW is used to manage work that requires robust controls to address associated risks.

These work scopes have been pre-defined by the Company as high risk work:

- Confined Space Entry;
- Ground Disturbance;
- Hot Work;
- Critical Lifts; and
- Bypass of Safety Critical Protective Devices (BSCPD).

Critical scopes must always have a PTW issued, regardless of whether the work is conducted by an Employee, Contractor, or Consultant. If a Contractor is already working under an existing External PTW, a separate PTW must be issued for the critical scope work activities.

The PTW must always assess the level of risk (low, moderate, high) to deem the supervision required however for Critical Scope work as per the Permit to Work Framework a PECL (PETRONAS Energy Canada Ltd.) Supervisor must always be on location and readily available for the critical scope work activities, even if the PECL or Contractor's Risk Matrix assessment is found to be low or medium based on the current level of risk.

*7.4.3 Managing Permits*

A PTW signed by both the PECL Permit Issuer and Contractor Permit Receiver is valid until the end of the working day or the end of a working shift which can include schedules such as a 5 days on and 2 days off, 4 days on and 3 days off, 16 days on and 12 days off or a 20 days on and 10 days off.

A permit is no longer valid as written should any of the changes as identified below occur:

- If additional hazards outside of the scope are introduced after issuing the PTW;
- Shift change has occurred;
- Replacement or crew change of a Company Permit Issuer;
- Job scope is altered or revised from original issue;
- Permit Receiver is replaced;
- Additional tasks are added to a work order;
- Identified timeline has expired;
- An incident has occurred on that location; or
- The work is completed and the PTW is closed.

If the above changes do not occur but the duration of a project is expected to extend past the time originally documented, the Permit Issuer may extend the PTW outlining the new expected completion. The work scope extension must comply with the hours of work regulated by the province where work is being conducted and the duration of a shift as indicated.

For Confined Space Initial Entry permits, the duration of the Permit is only void if additional hazards are introduced after the posting of the initial entry permit. All other PTWs are void on any of the above points;

A permit can be terminated or removed, either by termination or by suspension.

The latest version of the PECL Permit to Work (PTW) Framework can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

**7.5 Incident and Unsafe Act (UA)/Unsafe Condition (UC) Reporting**

A Contractor's HSE program must specify requirements to allow workers to effectively respond, notify, investigate unplanned events and communicate learnings for them.

*7.5.1 Definitions*

<b>Incident</b>	An incident is an event or chain of events that has caused harm to people, damage to property, company reputation or the environment.
<b>Near Miss ("NM")</b>	A Near Miss is an Incident that could have caused harm to people, damage to property, company reputation or the environment, but did not.
<b>Unsafe Act ("UA")</b>	An unsatisfactory behaviour that has the potential to cause, has caused, or contributed to an Incident.
<b>Unsafe Condition ("UC")</b>	An unsatisfactory physical condition in the workplace that has the potential to cause, has caused or contributed to an Incident.

The following are the categories of all events/incidents that shall be reported to PECL:

- All incidents, including personnel and process safety events ( ie injury, LOPC/release, property damage);
- All near misses;
- Unsafe Acts;

- Unsafe Conditions;
- Refusal to work and any discipline;
- Written warnings or terminations resulting from a safety infraction;
- All requests for drug and alcohol testing; and
- ZeTo Rule violations.

### 7.5.2 Prevention of unplanned events

PECL believes and fosters the attitude that prevention of events is paramount to a successful safe operations and promotes a healthy safety culture to the work force. In keeping with this initiative, PECL has an expectation that contractors will have in place, a system for workers to report and record UA, UC and Near miss events on a daily basis.

PECL expects that a worker who identifies an UA, UC and a Near Miss, must attempt to correct the behavior or condition (if safe to do so), make the area safe and report the issue to your immediate supervisor who can assist with corrective actions to eliminate or mitigate the risk or behaviour.

Any Contractor personnel who is involved in or witnesses an unplanned event is required to report it immediately to the PECL's Person in Charge (PIC)/Permit Issuer (PI) or whoever is acting in a supervisory capacity. In case the appropriate supervisor cannot be contacted, the HSE representative must be notified.

### 7.5.3 Incident reporting

Incident Reporting Requirements:

Incident notification	Immediately
Initial Report to PECL (Preliminary)	24 Hours
Final Report to PECL	7 Working Days

\* Timeframes above are recommended but extensions maybe be granted by PECL.

### 7.5.4 Incident Investigation

All incidents must be investigated by the Contractor to determine the root-causes and develop appropriate corrective actions to prevent reoccurrence.

Contractors MUST provide PECL with a copy of all incident investigations including findings and corrective actions within the timeframes laid out in table 7.5.3 unless an extension has been previously agreed by PECL.

PECL reserves the rights to do its own investigation for all events that occurred on PECL sites. Contractors shall also be responsible for assisting PECL in such investigations, if so required.

## 7.6 Personal Protective Equipment (PPE)

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A Contractor's HSE program shall include requirements regarding the selection, use, inspection, care, and maintenance of PPE. Additional PPE requirements can be identified through the Pre-job hazard assessment, JHA or PECL PTW process.

Contractors shall provide appropriate training for their workers and subcontractor workers for the selection, use, inspection, care, and maintenance of personal protective equipment. As a minimum all personnel on PECL sites must be equipped with, and trained in the use of the following, but not limited to:

- FR rated coveralls or Bibs and Shirts meeting the requirements of CGSB155.20 or NFPA2112 with CSAZ96-15 Class 1 FR Striping;
- CSA Approved Hard Hat;

## Health, Safety and Environmental (HSE) requirement for CONTRACTORS

- CSA Approved Safety Glasses;
- Gloves Applicable to Task and as directed by local requirements i.e. Drilling and completions require the use of Impact gloves;
- CSA Approved Safety Boots with ankle protection;
- CSA Approved Hearing Protection;
- Approved respiratory protective Equipment;
- Certified Fall Protection Equipment (at or over 3m or 10ft).
- Task-specific protective equipment, such as:
  - High voltage electrical safety equipment;
  - Confined space rescue equipment;
  - Welding, cutting, burning protective equipment.

### 7.6.1 PECL specific PPE related requirements:

- Hoodies are not permitted to be worn at any time on a PECL location;
- All personnel shall be clean-shaven when working on PECL locations (ref. ENFORM Facial Seal bulletin 03/29/2012).

### 7.6.2 PECL respiratory protective equipment (RPE) requirements (for welding activities):

PECL requires specific respiratory protective equipment (RPE) on any worksite where welding is being conducted (see Table 1 below). Respiratory protective equipment use and inspection are mandatory.

**Table 1 – Minimum Respiratory protective Requirements (RPE)**

	Outside	Inside Buildings or Enclosures within	Confined Space
Welding	RPE - Half mask with P100	RPE - Half mask with P100	RPE - Powered air purifying (PAPR)with P100
Industrial Hygiene Data	Industry data showed levels were above the action level (> 50% of the OEL <sup>1</sup> ) indicating RPE required	Requirements according to WorkSafeBC indicating RPE required	PECL data showed levels above the OEL <sup>1</sup> indicating RPE required

(1) OEL = Occupational Exposure limit

Welding Exposure Control Plan (see PECL Welding Exposure Control Plan on ProNet):

- The Contractor's Exposure Control Plan must meet or exceeds PECLs and the requirements as set out by WorkSafeBC
- The Contractor Exposure Control Plan must be available to all contract employees on the worksite
- The Contractor must be able to prove their employees have been trained to this Exposure Control Plan
- If the Contractor does not have an Exposure Control Plan, then the Contractor must use PECL's Exposure Control Plan

WorkSafeBC has adopted the CSA Standard W117.2-12 on Safety in Welding, Cutting and Allied processes:

- General ventilation, the natural or forced movement of fresh air, can reduce fume in the work area.
- **However, welding outdoors or in open workspaces does not guarantee adequate ventilation, thus RPE must be worn**

If a worker arrives on location without the required RPE – they will be unable to complete the work.

The contractor is responsible for:

- Ensuring their employees are medically fit to wear a respirator & know the health effects associated with welding
- Employees are respirator fit-tested and have the appropriate RPE.
- Conduct personal exposure monitoring to ensure levels are below the Occupational Exposure Limit.
- If the Contractor's Exposure Control Plan does not meet the requirements as listed in Table 1 – Minimum Respiratory Protective Requirements (RPE), then the Contractor must follow PECL's requirements as stated in Table 1

### 7.7 Ground Disturbance

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#### 7.7.1 Overview

Ground disturbance activities on a PECL worksite shall be done in accordance with all applicable regulations.

Ground disturbance is any work, operation or activity, on or under the ground surface, resulting in a disturbance or displacement of the soil or ground cover, but not where the disturbance or displacement is a result only of:

- Routine, minor road maintenance;
- Agricultural cultivation to a depth of less than 45 centimeters (cm) below the ground surface over a pipeline;
- Hand digging to a depth of no more than 30 centimeters (cm) below the ground surface as long as it does not permanently remove cover over a buried facility; and
- Hand auguring to a depth of one meter (m) where no buried facilities are present (historically undisturbed areas) will not require a full ground disturbance procedure to be followed.

#### 7.7.2 Planning/Work authorization

- Before proceeding with any ground disturbance activities (i.e. digging, excavation, trenching, ditching, hydro-vacuuming etc.), the PECL Person in Charge or delegate must be notified and all activities including disturbance or displacement of the soil or ground cover must be authorized by PECL through a Permit to Work, and the activities shall follow PECL Ground Disturbance Standard as well as any regulatory requirements;
- Contractor shall not perform any services requiring ground disturbance or excavation without the prior written authorization by PECL (see above). Unless otherwise agreed by PECL in writing, Contractor shall be responsible for the location and avoidance of all underground services and utilities and liable for all Losses and Liabilities caused by encountering underground services and utilities during the performance of the Work.

#### 7.7.3 Competency

Contractor personnel (Ground Disturbance Supervisors, workers etc.) will be trained as per applicable regulations for the jurisdiction. In addition to being trained in ground disturbance, contractors should be able to demonstrate how workers and supervisors are assessed as being competent to conduct any ground disturbance work.

The latest version of the Ground Disturbance Standard should be reviewed on [PECL's external website](#) ("Supplier & Contractor Management" section).

### 7.8 Energy Isolation

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The contractor's health and safety program must include procedures that address working on machinery/equipment and process systems, equipment, pipelines, piping that contain or have the potential to contain hazardous energy.

At a minimum, the program must include:

- Identification of all hazardous energy sources (i.e. kinetic, pneumatic, electrical, hydraulic, mechanical, chemical, thermal, and stored potential energy) applicable to equipment and work scope;
- Isolation practices that must be used (including but not limited to blanking, blinding and or disconnecting);
- Lockout and Tagout procedures (LOTO) for each potential energy source;
- Procedures for verifying isolation ;
- Training and Competency requirement for workers and supervisors.

Contractors must comply with the following PECL energy isolation requirements when working on PECL owned and/or operated process systems, equipment, pipelines, and piping that contain or have the potential to contain hazardous energy:

#### 7.8.1 *Blanking & Blinding*

PECL requires that isolation practices be used whenever it is necessary to work on systems, equipment or devices where an energy source might be released inadvertently, started up or suddenly moved while work is in progress.

- Blanking, blinding and or disconnecting must be carried out for all confined space entry activities and wherever a Job Hazard Assessment deems that the safest way to perform work on equipment is achieved through the blanking, blinding or disconnecting process;
- Energy sources include gravity, mechanical leverage, electricity, pressurized gases, hydraulics, steam, pipelines and vessels;
- Isolation ensures a system or device remains in a state of zero energy to protect anyone working on the system;
- Isolation includes blanks, blinds and disconnects and all workers must adhere to the PECL Blanking and Blinding Framework when completing blanking and blinding work.

Responsibilities:

- PECL is responsible for the preparation and control of equipment including, but not limited to isolation, draining, purging, and blinding;
- PECL will verify work areas are free from all operational hazards or conditions and if these hazards cannot be eliminated, identify potential controls that reduce the risk and consequence of an incident;
- Operational hazards and controls will be documented in the JHA and PTW;
- All workers will verify zero energy and identify hazards associated with the task during the isolation verification walk down with the PECL Permit Issuer or designate; and
- All workers performing work on the isolated system including perimeter blinding, must sign off verifying a walk down has been conducted utilizing the PECL Isolation Assessment Form.

#### 7.8.2 *Lockout/Tagout (LOTO)*

PECL requires that equipment Lockout and Tagout be completed for all work being performed on PECL equipment in which potential energy (i.e. kinetic, pneumatic, electrical, hydraulic, mechanical, chemical, thermal) could be unintentionally released resulting in harm to people, property, or the environment. All workers must adhere to the PECL Lockout Tagout Framework for any LOTO work being conducted.

### Responsibilities:

- PECL is responsible for the locking out and tagging out of PECL equipment where required;
- PECL will verify work areas are free from all operational hazards or conditions and if these hazards cannot be eliminated, identify potential controls that reduce the risk and consequence of an incident;
- Operational hazards and controls will be documented in the JHA and PTW;
- All workers will verify zero energy and identify hazards associated with the task during the isolation verification walk down with the PECL Permit Issuer or designate;
- All workers must sign off verifying a walk down has been conducted utilizing the PECL Energy Isolation Assessment Form;
- All workers who are involved in a group lockout (use of a lockbox) will be required to have their own individually keyed, personal lock;
- Personal lock tags shall have the following information on them:
  - Worker's name;
  - Trade; and
  - Company's name.

The latest version of the Blanking and Blinding Framework and Lockout Tagout Frameworks can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

## 7.9 Fire prevention and ignition management

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### 7.9.1 General

- Fire prevention and ignition management, is the responsibility of those involved in work planning and work activities;
- All activities including the use of flammable or combustible materials must be approved through a Permit to Work (PTW) as per the Permit to Work Framework and the Work Site Management Framework;
- During wild fire season the need for additional controls and levels of approval may be required before any hot work can be permitted. Contractors are responsible to ensure that ALL provincial as well as PECL requirements are met and that all additional fire protection equipment is readily available at the work site.
- The key elements for preventing fires in process industries is to prevent loss of containment and control ignition sources. Processes and equipment shall be designed, installed, and operated to prevent or minimize the release or spill of flammable gases, liquids, or combustible dusts, as well as to eliminate or control ignition sources;
- Review SDS(s) for all materials contacted along with specific hazards (fire, explosion, health, chemical reactivity); Identify materials that are flammable or combustible;
- Store, handle and use flammable and combustible liquids in well-ventilated areas;
- Use approved equipment, including labelled safety containers, for flammable and combustible liquids;
- Practice good housekeeping and equipment maintenance & keep area clear of combustible materials;
- Eliminate ignition sources (sparks, smoking, flames, hot surfaces) when working with flammable and combustible materials;
- All Contractor vehicles shall have a fire extinguisher. All fire extinguishers in addition to the annual re-certification shall also have a documented monthly inspection;
- Bond and ground metal containers when transferring flammable and combustible liquids
- Wear the specified Personal Protective Equipment (PPE) at all times as per the applicable SDS, work plan; and
- Know how to handle incidents (exposures, fires, spills, personal injury) involving the flammable and combustible liquids he/she works with.



### 7.9.2 Ignition Sources

- Ignition sources must be effectively controlled, particularly in all identified hazardous areas, by a combination of design measures and systems of work;
- PECL building entry practice must be followed when entering buildings. Ensure no ignition sources are brought into the building, i.e. Lighters, non-intrinsically safe equipment, cell phones, etc. All process buildings on site are equipped with fixed gas detection monitors and must be checked before entering any building.

The categories of ignition sources are:

- Open Flame (naked flame);
- Electrical equipment in classified hazardous area;
- Personal Ignition Sources;
- Vehicle and Engine;
- Electrostatic and stray electrical currents;
- Auto ignition of chemicals and pyrophoric substances; and
- Hand tools and equipment.

### 7.9.3 Hot Work (Open Flame)

Open flame hot work includes any activity that produces sufficient heat and or sparks. These activities can include open torch, heating, cutting, welding, brazing, grinding, blasting, mobile and or portable internal combustion engines and or similar operations.

A Hot Work PTW for these work activities must be issued as per the Permit to Work Framework for the execution of hot work to control ignition sources.

Depending on the nature of the job and work site, no draining or venting of hydrocarbons shall be performed within a 15-meter radius from the source of ignition. However, if this expectation cannot be met, a risk assessment shall be conducted and all hazards controlled as per the Job Hazard Assessment or Safe Operating Procedure (SOP) as per the Worksite Management Framework.

Where work is to be conducted that involves potential ignition sources, proper measures must be implemented to manage or eliminate risk that can include but is not limited to:

- Use of 4 head gas monitor (Continuous Gas Monitoring);
- Use of firefighting equipment (i.e. fire extinguisher, fire blanket...etc.);
- Fire Watch/Spark Watch; and
- Initial Gas Testing.

When carrying out incompatible activities such as breaking of a flange and draining which could release flammable product/vapour around sources of known open flame in the plant, the activities shall be controlled as identified in this Technical Standard and as per the Worksite Management Framework and the Permit to Work Framework.

### 7.9.4 Personal Ignition Sources

Control of potential ignition sources is essential for an effective fire prevention program. Lighter, matches and lighted cigarettes continue to be a common personal ignition source. Personal ignition sources also include a material, object, or device that is potentially incendiary or capable of producing a spark and includes all battery operated personal devices such as personal electronic or electrical devices including but not limited to a pager, cellular phone, personal digital assistant (PDA), personal radio, music player, computer, walkie-talkie, camera, flashlight and car alarm key.

- Personal ignition sources that are non-intrinsically safe such as pagers, cellular phone, personal digital assistant (PDA), personal radio, music player, computer, walkie-talkie, camera, hand torch and car alarm key must be strictly controlled while on PECL worksites in a hazardous area;

- The use of any of these devices must be controlled in accordance with the Worksite Management Framework and the Permit to Work Framework. The use of these devices falls into the non-intrinsically safe hot work category and therefore must be accompanied by a hot work PTW;
- Designated safe smoking areas that meet WorkSafeBC guideline Part 4.81 must be implemented at all work locations. All designated smoking areas must be placed at a minimum of 6 m (20ft.) from a doorway, window or air intake of an indoor workplace;
- Personal ignition sources shall be strictly controlled in a hazardous area. Hazardous work place entry shall have adequate and clear signage to warn all workers from bringing in personal devices that can be an ignition source.

### *7.9.5 Control of Ignition Sources from Vehicles*

Most vehicles contain a wide range of ignition sources. These include electrical circuits; the inlet and exhaust of any internal combustion engine; electrostatic build up; overheating brakes, and other moving parts. Regardless of fuel types, all vehicles including but not limited to cars, trucks, pickups, tankers, man lifts, forklift and mobile cranes are sources of ignition and their use in hazardous areas shall be controlled using a hot work PTW.

The following requirements for the control of ignition sources from vehicles must be implemented:

- No other Vehicles can be started or shut off within 8m (25ft.) of a tank truck when it is loading, unloading, connecting or disconnecting from flammable vapors or liquids;
- Internal combustion engines must be shut down within the zone defined as a Class 1 Division 2 or higher classification (see section 5.9), unless their operation is integral to the work process, and covered by a PTW as per the Permit to Work Framework and the work activity is managed as per the Worksite Management Framework;
- Diesel powered Vehicles must:
  - Have a Positive Air Shut Off (PASO) or other effective method for engine shut down to operate within the zone as a Class 1 Division 2 or higher classification; and
  - Not be operated within 7m (23ft.) from the wellhead unless Vehicle is equipped with a PASO.
- During well servicing activities, including slick line and wire line operations, diesel engines without a PASO device must be kept at least 25m (80ft.) from the well head;
- During drill stem testing motor Vehicles must not be permitted within 25m (80ft.) of the wellbore;
- No Vehicles may be operated within a 3m (10ft.) radius of the wellhead except Vehicles that are specifically required to do so as part of an operation being performed on a well and covered by a Permit to Work;
- An exhaust pipe from an internal combustion engine, located within 25m (80 ft.) of any well, process vessel, oil storage tank or other source of ignitable vapors, must be constructed so that any emergence of flame along its length or at its end is prevented. The end must not be closer to the vertical center line of the well projected upward than 6m (20ft.) and must be directed away from the well; and
- At all times regular monitoring must be conducted, using a 4-head gas monitor (LEL, O<sub>2</sub>, H<sub>2</sub>S, CO), including continuously monitoring the air space within and surrounding the immediate work environment.

**Vehicles entering or being operated in an identified hazardous area must be controlled via a hot work permit as per the Permit to Work Framework.**

### *7.9.6 Static Electricity*

Static electricity is a surface phenomenon associated with the contact and separation of dissimilar insulating surfaces. It can occur at solid-solid, solid-liquid or liquid-liquid interfaces. When two dissimilar materials

touch and separate, there is likely to be transfer of free electrons between them, one giving up electrons to the other, and an attractive force is established.

Examples of such static electricity generations that are commonly found in industry are as follows:

- Any Motion which involves friction between contacting surfaces, usually of dissimilar liquids or solids;
- Steam, air or gas flowing in a pipe or hose;
- Splash filling of products in tanks;
- The separation of a stream of liquid from contact with a hose, faucet or pouring spout;
- Pulverized materials passing through chutes or pneumatic conveyors;
- Non-conductive power or conveyor belts in motion;
- Moving vehicles and mechanical equipment; and
- Lightning strike.

Splash filling refers to filling up of a vessel or a tank with high speed ejection of liquid from nozzle resulting in a free fall of liquid generating a mist of fine droplets and accumulation of electrostatic charge inside the vessel or tank.

Non-volatile combustible liquids can also produce mists, which are easily ignitable even though the temperature is well below the flash point. Fine mist droplet build-up and splash filling can create an electrostatic discharge sufficient to act as a source of ignition.

To prevent the production of a mist due to splash filling inside a tank or a static discharge, it is recommended to restrict the filling velocity in the pipeline to 1 m/s (3 ft/s) until the outlet of the fill line has been covered by minimum depth of 0.5 m (1.6ft).

### *7.9.7 Bonding /grounding/fluid transfer*

Safe loading and unloading of liquids (i.e. Condensate, Produced Water, Oil, Methanol, Glycol...etc.) can be dangerous and can all lead to injuries or death. Static electricity is one of potential ignition sources that is associated with the liquid transfers;

When loading and unloading of liquids from vehicles and trailers following requirements need to be followed:

- The pumping of fluids only occurs at designated loading/unloading points;
- Truckers close tank valves during transport when the truck is empty;
- Trucking companies maintain and inspect tanker load out equipment and couplings to avoid line leaks;
- Tank trucks are kept at a minimum of 7m (23ft) (as per IRP 4) from the tank to be filled or unloaded;
- The tank to be filled is separated or unloaded from any other tanks being used.
- Proper PPE is worn by the workers taking part in activity;
- The driver has a gas monitor on their person at all times;
- The truck is positioned with truck vent down line from the loading line;
- The parking brake is applied;
- Wheel chokes are in place where required;
- All equipment shall be properly grounded and bonded prior to the start of any job task that involves fluid transfer;
- The grounding and bonding cable is attached where required and all grounding and bonding must be verified and proven effective (ohms testing) prior to the work activity commencing;
- The maintenance records of their equipment is filled out;
- The contractor company vehicle inspection checklists including Vac Truck and Fluid Hauling Inspection is completed; and
- A PASO is installed for all diesel engines and that the intake air shut-off is working.

- Contractors and Workers who perform work activities where the transfer of flammable and volatile fluids occurs of (i.e. Produced Water, Condensate, Zero Entry Tank cleaning, etc.) must be trained and competent in grounding and bonding through a recognized corporation such as DETAC .

### **7.10 Preventative maintenance program and pre-use inspection for equipment, tools and machinery**

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A contractor's HSE program shall address the selection, certification, inspection and maintenance for their equipment, tools and machinery.

#### *7.10.1 General*

- Contractor shall establish and implement a system or arrangement for inspection and certification of the equipment, tools and machinery required in connection with the Scope of Work to ensure the safe execution of Scope of Work;
- Contractor to ensure that such equipment, tools and machinery is fit for the use intended and in proper working order;
- Contractor shall ensure that all Contractor's machinery, tools and equipment, facilities, and other items associated with the Scope of Work ,whether purchased or rented are maintained in a safe condition and to be operated by competent operators;
- Where Contractor's machinery, tools and equipment, facilities, and other items associated with the Scope of Work whether purchased or rented are identified as deficient, the program must cover off the tagging of equipment as being out of service and include tracking to closure for the repairs of said equipment where applicable;
- Contractor shall maintain and perform Preventive Maintenance in accordance to the Original Equipment Manufacturer (OEM) recommendation and Industry Best Practices;
- Contractors shall provide preventative maintenance records for equipment, tools and machinery at the request of PECL;
- In addition, Contractor shall maintain and perform continuous pre-use inspection as per regulatory and manufacturer requirements throughout the Scope of Work;
- Contractor shall ensure that all supplied machinery, tools and equipment, facilities, and other items associated with the Scope of Work are in good condition and fit for their intended use.

#### *7.10.2 Tools*

- Tools shall only be used and operated for the job they were designed to perform as per manufacturer recommendations;
- Tools and equipment will not be tampered with or modified. It is prohibited to modify or remove any safeguards supplied on any tool or piece of equipment;
- Contractor shall ensure electrically powered tools meet the hazardous zones requirements where applicable and be protected through GFCI (ground-fault circuit interrupter). All electric cables shall be industrial type. Use of domestic electric cables is prohibited;
- Contractor shall ensure that all equipment meets the requirements of hazardous area classification and PECL prescribed requirement.

#### *7.10.3 Mobile Equipment*

- All mobile equipment need to be certified to operate in BC;
- All operators of mobile equipment including hoisting equipment must be trained and competent in the use of said equipment;
- All mobile equipment including hoisting equipment must come to site with a certificate of NDT (Non Destructive Testing), yearly inspection certificate, equipment logbook, pre use inspection log and the manufacturer's operator manual;

- All mobile equipment must be equipped with fire extinguishers;
- Contractors shall provide preventative maintenance records for equipment, tools and machinery at the request of PECL;
- In addition, Contractor shall maintain and perform continuous HSE inspection and audits throughout the Scope of Work and shall promptly implement all recommendations made pursuant to the said inspection and audits.

### *7.10.4 Pressurized equipment rating*

Pre-use inspection shall also be conducted on all Contractor supplied equipment that is pressure rated, focusing on verifying the pressure rating of the valves, including PSV's against the output pressure in the system (for example pump rating).

### *7.10.5 Rental equipment provided by PECL*

- Any Equipment provided by PECL to a Contractor for the benefit of the Contractor or its subcontractors is provided on an "as is/where is" basis with no warranty of performance and at the sole risk and liability of Contractor to ensure that such Equipment is fit for the use intended and in proper working order;
- Contractor will ensure any equipment provided by PECL is inspected and will notify PECL of all defects prior to use. In the event Contractor notifies PECL of any defects, PECL shall use commercially reasonable efforts to fix all defects, other than latent defects, if any, in a timely manner.

## **7.11 Working Alone**

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Working alone, or in isolation, means to work in circumstances where assistance would not be readily available to the worker in case of an emergency and/or a worker being in ill health or injured.

The determination that assistance is "readily available" can be made by answering the following questions:

- Are other people in the vicinity?
- Are those people aware of your worker's need for assistance?

If the answers to each of the previous questions are "yes", then it has been determined that assistance is readily available and the working alone process would not need to be followed. If any of these questions are answered "no", then the requirements for working alone would apply.

PECL working alone requirements are:

- Contractors are required to develop and follow their working alone program;
- Contractor ensures that their workers are made aware of the hazards of working alone and have knowledge of necessary controls & requirements;
- Workers are made competent in wild life awareness and use of approved bear deterrent devices, where required;
- Contractor regularly identifies and communicates to PECL PIC the tasks and workers who at times might work alone;
- "Working alone" Job Hazard Assessment (JHA) must be completed prior to start work;
- Obtain Permit to Work (PTW), where applicable;
- Ensure that effective ways of communicating including routine check-in times and in emergency situations are established and followed;
- Contractor has established process to respond when "working alone" worker has not communicated in established timeframe or is in an emergency situation.

### 7.12 Lifting and Hoisting

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A contractor's HSE program shall address the certification, inspection, maintenance, storage and transport of contractor provided rigging, lifting and hoisting equipment and other related equipment.

Contractors that perform lifting and hoisting activities on PECL worksites shall at minimum meet the following requirements:

#### *7.12.1 General*

- Ensure all WorkSafeBC regulations, policies and guidelines in regards to lifting/rigging are followed on PECL worksites;
- Ensure tag lines are used when lifting loads unless the qualified and competent crane or boom truck operator determines that it may cause an undue hazard (i.e. during a tandem lift).

#### *7.12.2 Certification, inspection and maintenance*

- Ensure a mobile crane or boom truck is inspected at least once every 12 months by a professional engineer that is licensed to practice in British Columbia;
- Ensure a mobile crane or boom truck has an inspection decal/sticker affixed to it showing that the inspection is current;
- Ensure a mobile crane or boom truck has a paper document showing that the inspection is current;
- Ensure that combination units (i.e. where the end user supplies the carrier and a crane is mounted to it) there is a stability test with the crane or boom truck available for viewing;
- Ensure that integral units (manufacturer designs and supplies the entire unit) are not required to supply a stability test. However a COC or Certificate of Compliance shall be available for viewing;
- Ensure all slings, shackles, eye bolts, spreader bars and other various below the hook lifting devices have a WLL (working load limit) that is legible;
- Ensure all slings, shackles, eye bolts, spreader bars and other various below the hook lifting devices are used as intended as per the OEM.

#### *7.12.3 Competency*

- Ensure the Operator of a crane or boom truck is a qualified and competent person who has been instructed to operate the equipment;
- Ensure the Operator of a crane or boom truck has a valid operator's certificate issued by a person acceptable to WorkSafeBC (aka WCB) ;
- Ensure that the Operator of a crane or boom truck, whether certified in British Columbia or another suitable jurisdiction, has been registered with BC Crane Safety. Operators must be able to show proof of registration to a PECL representative;
- Ensure that the Operator of a crane or boom truck, crane Operator registration matches the crane or boom truck that they are operating.

#### *7.12.4 Critical lifting operations*

- Critical lifting operations (using cranes or other lifting equipment) must be executed under a Critical Lift Plan (provided by a qualified and competent subject matter expert (i.e. crane operator or Crane Company)) and the plan must clearly define the limitations on the loads, lifting methods and areas of operation;
- A Risk Assessment will be required in each case, and authorized by a qualified Worker prior to commencement;
- Prior to any critical lifting operation commencing, a review of the approved Critical Lift Plan must be conducted. Periodic review of the Critical Lift Plan must be carried out to ensure that no critical factors have changed; (i.e. environmental conditions create additional hazard -lightning, wind exceeding manufacturer recommendation, etc.), lift weight not accurate, lift location changes, ground condition changes);
- Any changes must be revised within the Critical Lift Plan.

Critical lifts can include one or more of the following and is not limited to:

- Lifting of a load over or between energized high voltage electrical conductors, process equipment or facilities;
- A lift by a mobile crane or boom truck that exceeds 90% of its rated capacity while it is lifting the load at a load radius of more than 50% of its maximum permitted load radius, taking into account its position and configuration during the lift;
- A lift in which the center of gravity of the load changes during the lift;
- A lift in which the length of one or more sling legs changes during a lift;
- Lifting operation at location less than the specified safe distance from live overhead power line as defined in regulations;
- A tandem lift involving the simultaneous use of two or more cranes, hoists or other pieces of powered lifting equipment;
- A lift of a person in a work platform suspended from or attached to a crane or hoist; and
- A lift of a submerged load.

### *7.12.5 Working near High Voltage*

A crane or hoist must be operated in a manner that prevents any part of the crane or hoist, load line, rigging or load from coming within the minimum distance of energized high voltage electrical conductors or equipment (Crane Operators must follow WorkSafeBC's limits of approach).

If the minimum distance cannot be maintained because of the circumstances of work or the inadvertent movement of persons or equipment, an assurance in writing from the representative of the owner of the power system, must be obtained and documented.

Before a crane or hoist is operated near a source such as a radio transmitter or energized high voltage electrical equipment which may induce an electric charge which could pose a hazard to workers, the following precautions must be implemented:

- The crane or hoist must be effectively grounded;
- Any induced electric charge on the load must be dissipated by applying grounding cables or by other effective means before workers contact the load; and
- Flammable materials must be removed from the immediate work area.

### *7.12.6 Use of Man baskets and MEWP*

- When providing moveable work platforms, otherwise known as a man basket, ensure it is inspected at least once every 12 months by a professional engineer;
- Ensure the man basket has an inspection decal/sticker affixed to it showing that the inspection is current;
- Ensure the man basket has a paper document showing that the inspection is current;
- When using a man basket, ensure a trial lift is completed as per CSA Standard Z150-1998 Section 5.4.7.2.4;
- Ensure that a MEWP (mobile elevating work platform, commonly referred to as a Genie lift or JLG lift) is inspected at least once every 12 months by a professional engineer;
- Ensure the MEWP has an inspection decal/sticker affixed to it showing that the inspection is current;
- Ensure the MEWP has a paper document showing that the inspection is current.

### *7.12.7 Forbidden Lift Practices*

- A Worker must not ride on a load, sling, hook or any other rigging equipment as per WorkSafeBC Part "14.51 Riding hook or load";

- No use of synthetic lifting slings on abrasive or sharp loads as per WorkSafeBC Part 15.39 "Sharp edges";
- Using devices not designed or intended for vertical lifting(i.e. ratchet straps, fall protection equipment) as per the OEM;
- Lifting devices must be either commercially manufactured or certified by a professional engineer (i.e. no homemade lifting devices);
- At no time is lifting equipment and or applicable appliances to be used as a permanent support or suspension device for equipment or structure.

### *7.12.8 Open Hook Restriction*

- A hook must have a safety latch or other means that will retain slings, chains, or other similar parts, under slack conditions; and
- A hook used in an application where manipulation of a safety latch or other retaining means may cause a hazard to a worker or where there is no hazard to a worker if the load becomes dislodged is exempt from the requirement noted above.

### *7.12.9 Inclement Weather*

- Contractor shall ensure that OEM (original equipment manufacturer) requirements for cranes or other lifting equipment, in relation to inclement weather (wind, lightning, working in sub-zero temperatures etc.) are available for review and consultation;
- During windy conditions (30 km/hr or greater), follow the OEM (original equipment manufacturer) requirements for the specific equipment being used;
- In sub-zero temperatures, tasks involving hydraulic cranes shall be conducted with regard to potential failure of hydraulic components as well as metal components, such as a boom, becoming more brittle;
- In conditions when extreme temperatures are experienced (-25°C or colder) the Contractor's supervisor and/or crane operator and PECL PIC shall determine through consultation with OEM (original equipment manufacturer) specifications and /or through risk assessment, whether restrictions on lifting activities should be imposed (most of OEM's specify de-rating cranes in such condition).

### *7.12.10 Lightning Safety*

See below in "Adverse Weather Section"

## **7.13 Adverse Weather Conditions**

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### *7.13.1 Lightning Safety*

A communication method must be established prior to conducting work activity where potential lightning exists. Communication can be through mediums such as a two way radio, horn, voice, etc. The established communication method must be effective in warning and informing workers of the expectations to cease work when lightning is of concern.

The decision to suspend work or to re-start work will be through communication with PECL PIC/Representative.

When thunder and lightning activity is near the facility and in the absence of lightning detection equipment Contractor shall follow the 30/30 Rule recommended by the National Lightning Safety Institute.

- The first "30" represents 30 seconds;
- If the time between when you see the flash and hear the thunder is 30 seconds or less, the lightning is close enough to affect operations;



- Work can restart 30 minutes after hearing the last sound of thunder or seeing the last lightning.

It is important to note that thunder (sound) travels at a speed of about 1,088 feet per second, or about 0.2 miles per second (depending on air temperature and humidity). That means it'll take the sound of thunder about 5 seconds to travel 1 mile; and thunder is seldom heard beyond 10 miles under ideal conditions

- Vessels

All outside vessels including those extruding through the roofs of buildings are required to be evacuated during lightning activity.

- Flare Stack

All work on or inside flare stack equipment shall cease immediately. If possible and if safe to do so the flare stack shall be lowered to the ground and workers shall immediately evacuate the surrounding area.

- Lifting activities
  - If the time between when you see the flash and hear the thunder is 30 seconds or less, the lightning is close enough to affect operations;
  - In that case lifting activity must cease .Where safe to do so the crane boom shall be lowered;
  - Work can restart 30 minutes after hearing the last sound of thunder or seeing the last lightning.

### *7.13.2 Wildfire*

During wildfire season (early April to late October), fire can sweep through grasslands and forests producing dense smoke that can be a major source of toxic air pollutants. Smoke can be carried by high level winds to communities and work locations downwind hundreds or even thousands of kilometers away.

During this time all work will be conducted within the recommendations of the Air Quality Health Index which measures air quality and determines wildfire smoke health impacts.

### *7.13.3 Working in Heat and Cold Stress Condition*

Working in hot or cold conditions creates stress on the worker and can pose serious hazards. The contractor's health and safety program shall include a section on Heat & Cold Stress identifying the following:

- The health effects associated with Heat & Cold;
- The risk factors associated with Heat Stress & Cold Stress;
- Heat Stress evaluation through air temperature and/or humidex;
- Cold Stress evaluation through wind chill temperature index and/or work/warmup schedule;
- Control Measures (elimination, engineering, administrative or PPE);
- Educate/train workers on hazards & controls associated with Heat & Cold Stress ;
- Medical Surveillance (fit to work, trained in identifying signs & symptoms, reporting & seeking medical attention).

### *7.13.4 Heat Stress*

- Ensure a hazard assessment is completed and employees are educated on health effects associated with Heat, the risk factors & personal protective equipment;
- Proper hydration is critical;

- The Environment and Climate Change Canada uses a guideline called the Humidex to reflect the combined effects of temperature and humidity into one number to reflect the perceived temperature. It gives an index of discomfort under warm weather conditions.

### 7.13.5 Cold Stress

Ensure a hazard assessment is completed and employees are educated on health effects associated with Cold, the risk factors & personal protective equipment. Use the Wind Chill Temperature Index to assess the cooling effect of the environment. Consider the potential for accidental exposure to severe cold in the risk assessment. Note that hypothermia can occur at temperatures below 10°C in windy or damp conditions.

For more information see:

- Government of BC - [Air Quality Health Index](#)
- Government of Canada - [Warm season weather hazards](#)
- Government of Canada - [Wind Chill Index](#)

## 7.14 Workplace Hazardous Materials Information System (WHMIS-2015) / Global Harmonization System (GHS)

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Contractor shall ensure that:

- They have a written hazard communication program that meets the Workplace Hazardous Materials Information System (WHMIS) 2015 regulations;
- Hazardous chemicals will be identified and tracked from arrival at the worksite to eventual consumption in the process or disposal;
- Contractors shall ensure that before a hazardous product (as defined by the Canada's Hazardous Products Act) is brought onto a PECL worksite that they provide the relevant safety data sheets (SDS) to their PECL representative;
- Hazardous materials are properly labelled;
- Educate and train workers on the hazards and safe use of products;
- Materials are available to produce workplace labels as necessary;
- Provide Workers with access to up-to-date SDSs for any hazardous products found in the workplace and that the appropriate control measures are in place to protect the workers ;
- Contractor's health and safety program shall also ensure that a chemical hazard identification/assessment process has been established to identify hazardous materials related risks, provide their workers with the necessary training, appropriate PPE, and observe the appropriate handling requirements for such materials.

Contractors are responsible for ensuring that their subcontracted workers also comply with the hazardous materials identification, training, and management requirements.

### 7.15 Exposure Control Plan (ECP)

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Health and safety hazardous exposures must be identified assessed and controlled to reduce the risk of injury, illness or incidents, and to meet the requirements of Workplace Hazardous Materials Information System (WHMIS) and applicable occupational health and safety laws and regulations.

An exposure control plan is required when the following conditions are present:

- The results of exposure monitoring indicate that a worker is or may be exposed to an air contaminant at levels greater than 50% of its exposure limit;
- Measurement is not possible at 50% of the applicable exposure limit;
- An exposure control plan is required by another section of the Regulation (i.e. Heat Stress, Cold Stress etc.)

The Exposure Control Plan must incorporate the following elements:

- Identify the specific hazards to be addressed in the plan;
- A statement of purpose and responsibilities;
- Document the health effects associated with the specific hazard;
- Identify risk factors, evaluation and control measures;
- Outline education and training requirements;
- Written work procedures, when required;
- Hygiene facilities and decontamination procedures, when required;
- Industrial hygiene monitoring and documentation;
- Health monitoring (Medical Surveillance);
- State the plan must be reviewed at least annually as required by WorkSafe BC.

Exposure Control Plans must be available on site and followed by all workers. Contractors must ensure workers are trained and competent in the use and application of their own Exposure Control Plan for the specific occupational hazard their workers are exposed to.

Some specific Exposure Control Plans that would address related occupational hazards are listed below but not limited to:

- Benzene and Total Volatile Organic Compounds (TVOCs);
- Heat and Cold Stress;
- Hydrogen Sulfide (H<sub>2</sub>S);
- Naturally Occurring Radioactive Materials (NORM);
- Noise;
- Oil Mist;
- Silica;
- Welding.

Contractor must meet or exceed the PECL Exposure Control Plans.

Contractors must provide a copy of their own hazard specific Exposure Control Plan prior to work starting for PECL to review where applicable.

### **7.16 Driving safety program**

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Contractor's HSE program must include a driving safety program that addresses the following responsibilities and expectations:

- Driver Responsibilities;
- Carrying Passengers;
- Driving and Working Hour Limits ;
- Assessment of Site Hazardous Areas;
- Vehicle maintenance and pre-trip inspections ;
- Distracted Driving;
- Journey Management & Working Alone Program;
- Winter Driving;
- Travel on Resource Roads;
- Signaling and directing vehicles;
- Parking of a Vehicle;
- Use of Off Road Vehicles (All Terrain Vehicles, Utility Vehicles and Snowmobiles);
- Recovery and Towing;
- Transportation of personnel(e.g. use of crew busses) ;
- Transporting of Dangerous Goods;
- Cargo securement;
- Assessment of Site Hazardous Areas;
- Vehicle operations in fire and explosion hazard areas;

- Safe Loading and Unloading equipment and machinery;
- Safe Loading and Unloading (Liquids);
- Refueling Safety Requirements.

### *7.16.1 Assessment of Site Hazardous Areas:*

The use of Vehicles in hazardous areas must comply with the site hazardous area classification zones and the requirements of PECL Fire Prevention and Ignition Management Technical Standard. In addition to the hazardous area classification zones, before entering a site, Vehicle drivers must:

- Ensure that Vehicle entry requirements are defined on the Permit To Work (PTW) as per the Work Site Management Framework;
- Acknowledge hazards related to onsite hazardous area or danger zone;
- Determine the minimum distances to maintain between a Vehicle and any identified hazards as per the Fire Prevention and Ignition Management Technical Standard;
- Use a Positive-Air-Shutoff (PASO) if using a diesel-fueled Vehicle in areas where flammable or explosive vapors may be present;
- Use a 4 head gas monitor that is bumped daily and calibrated to manufacturer specifications (i.e. LEL, H<sub>2</sub>S, CO, O<sub>2</sub>) when entering the lease where required;
- Know the safe limits of approach and follow the directions of a spotter when operating a Vehicle near overhead power lines or in close proximity to other Workers and, Vehicles or mobile equipment; and
- Ensure that if operating in an enclosed building or boarded area, the building or area must be equipped to vent the exhaust outside.

### *7.16.2 Safe Loading and Unloading of equipment and machinery*

Loading and unloading of equipment and machinery from vehicles can be dangerous and can seriously hurt people. The moving of heavy loads, materials, machinery, moving or overturning vehicles and working at height can all lead to injuries or death. The loading and unloading of vehicles and trailers needs to ensure that:

- The area is clear of other traffic, pedestrians and people not involved in loading or unloading;
- The area is clear of overhead electric cables so there is no chance touching them, or of electricity jumping to 'earth' through machinery, loads or people;
- The area is level, to maintain stability, vehicles and trailers shall be parked on firm level ground;
- Loads are spread as evenly as possible, during both loading and unloading. Uneven loads can make the vehicle or trailer unstable;
- Loads are secured or arranged so that they do not slide around, racking may help stability;
- Moving heavy loads by hand can be dangerous, consider mechanical equipment to aid in the moving of heavy loads;
- The buddy system is used for long and or awkward loads;
- The vehicle or trailer has its brakes applied, the vehicle must be as stable as possible;
- Vehicles and trailers must never be overloaded. Overloaded vehicles can become unstable, difficult to steer or hard to brake;
- Ensure the work area including the floor or deck of the loading area is clear of all potential hazards before loading to make sure it is safe (i.e. debris, broken boarding, etc...);
- Loads are suitably packaged especially when pallets are used, the driver needs to check that:
  - They are in good condition;
  - Loads are properly secured to them; and Loads are securely and safely attached on the vehicle and or trailer.
- Loads that have the potential to move on the trailer must be cross chained to prevent movement and secure the load if the trailer became compromised;
- Load overhang must be in compliance with local regulations;
- Deck pins are placed at all times and are the size appropriate for the load being transferred;

- Tailgates and sideboards are closed when possible. If over-hang cannot be avoided, it must be kept to a minimum. The over-hanging part of the load must be clearly marked; and
- Checks are completed before unloading to make sure loads have not shifted during transit, and are not likely to move or fall when restraints are removed.

### *7.16.3 Signaling and directing vehicles*

Requirements for Vehicle signalers and swampers are as follows:

- Be competent when guiding vehicles;
- Be visible to the driver or the driver must stop all Vehicle movement immediately;
- Use standard hand signals to communicate with the driver as per IRP (Industry Recommended Practice) 12 Workers' Guide to Hand Signals for directing vehicles;
- Immediately signal to the driver to stop if any person or object enters the vehicles intended path; and
- That if the vehicle driver cannot either directly or via mirror see immediately behind the vehicle then it must be fitted with an automatic reversing alarm audible above the ambient noise level in the workplace.

### *7.16.4 Off Road Vehicle Safety (All Terrain Vehicles, Utility Vehicles and Snowmobiles)*

Off Road Vehicle Safety (All Terrain Vehicles, Utility Vehicles and Snowmobiles) requirements for the use of Off Road Vehicles are as follow:

- Driver has attended a Company approved course in the safe operations of off road Vehicles;
- Wear appropriate PPE including approved headgear as per the Personal Protective Equipment Technical Standard and manufacturers recommendations (i.e. DOT approved helmet);
- Conduct a pre-trip inspection as per manufacturer recommendations including the following:
  - Tires and wheels for air pressure;
  - Controls and cables including the throttle, brakes and foot shifter;
  - Lights and electrical including the ignition switch, engine stop switch, headlights and taillights;
  - Oil and fuel levels; and
  - Chain and drive shaft.
- Ensure that the Off Road Vehicles are properly maintained, in good condition and includes a first aid kit;
- Must carry a radio or cell phone;
- Ensure that passengers are not carried in or on off road vehicles unless the vehicle is designed for that purpose(Side by side);
- Seat belts must be used when fitted by manufacturer ( e.g on "side by side" vehicles);
- Ensure that off road vehicles are not being used to tow other vehicles;
- Ensure that off road vehicles are loaded in a manner that conforms to weight, height and other limits specified by the manufacturer of that particular off road vehicle; and
- Exercise particular care when operating off road Vehicles on grades, uneven terrain, soft or slippery surfaces, and in poor weather conditions.

### *7.16.5 Refueling Safety Requirements*

- Always comply with posted safety precautions;
- Remain in attendance at the fill nozzle while refueling;
- Do not re-enter a vehicle while it is being refueled due to the "potential to create static electricity;
- Always place fuel containers on the ground when filling to protect against static electricity;
- Check that there are no ignition sources or hot work within 5 meters of the refueling area;
- Do not smoke or allow anyone else to smoke in the area;
- Do not use a cell phone or any other hand held electronic device while fueling;

- Ensure the refueling area is well away from any stream or water body so that any spills will not enter the water;
- Ensure the area is well ventilated;
- Ensure it complies with regulated standards if refueling from another vehicle. Otherwise use a pump and hose to dispense fuel or a Canadian Standards Association (CSA) or American National Standards Institute (ANSI) approved fuel can;
- If necessary, drivers may discharge static electricity on their body by touching metal on a vehicle at least one meter (m) away from the nozzle before handling a fuel hose or fuel can; and
- Ensure that fuel pumped under pressure is pumped through hoses with internal bonding wires connecting the nozzle to the pump, or that a bonding cable connects the nozzle to the pump.

### 7.17 Resource Road Rules

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Contractors are responsible to ensure that their drivers review and understand the requirements before they drive on any Resource Roads.

PECL had summarized the requirements for safe travel on a resource road in the following document - "Resource Road Safety Requirements and Radio Calling Protocol".

Drivers are responsible to:

- Read and understand "Resource Road Safety Requirements and Radio Calling Protocol" ;
- Carry a copy of "Resource Road Safety Requirements and Radio Calling Protocol" in their car.

The latest version of the PECL's "Resource Road Safety Requirements and Radio Calling Protocol" can be found on [PECL's external website](#) ("Supplier & Contractor Management" section).

### 7.18 Recovery and Towing Requirements

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Recovery and Towing Requirements for recovering and towing a vehicle are as follow:

- Inform Supervisor when planning a recovery or towing attempt;
- Conduct a Job Hazard Assessment (JHA) before vehicle recovery or towing including considerations of equipment selection, placement and traction;
- Ensure that the recovery or towing vehicle is the same size or larger than the stuck Vehicle. The Gross Vehicle Weight Rating (GVRW) is found on the driver's door and must be added to any load the stuck vehicle is carrying;
- Lifting slings, chains and cables must not be used;
- Conduct recovery using a recovery strap with proper hoops;
- Ensure that only approved recovery straps are utilized;
- Ensure that recovery straps are not attached to bumpers, ball hitches, bull bars, or tie down eyes;
- Ensure that the shackle being used to secure the strap has a Working Load Limit (WLL) in excess of the recovery strap strength;
- Attach recovery straps only to a load rated component, engineered recovery device or on shackle with pin in hitch receiver;
- Ensure that all bystanders are at least two times the length of the recovery strap away from the Vehicles; and
- Ensure that Vehicles are aligned so that they are within 10 degrees of a straight line.

### 7.19 Distracted Driving

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Distracted driving is one of the main causes of Vehicle collisions and is illegal in all jurisdictions where PETRONAS Energy Canada Limited (PECL) operates.

- The Company requires vehicle drivers to pull over and stop when safe to do so to use a cell phone or other mobile communication devices while operating a vehicle for company business;
- Drivers are prohibited from using a cell phone, other mobile communication devices, hands free devices (e.g. blue-tooth), pagers, laptops or other electronic devices except, when the vehicle is pulled over and is properly parked in a rest area, designated parking area, or other safe location. This includes placing or receiving calls, pages, text messages or emails; The only exemption for the hands-free system requirement, would be in the event of an emergency;
- This does not prohibit having the electronic device turned on and operational while operating a vehicle. Voice activated navigation systems are permitted to be used while traveling but, they must be programmed prior to operating the vehicle;
- Other Activities – Drivers are prohibited from reading books magazines, newspapers, maps, etc., from writing, and from conducting personal grooming while a vehicle is in motion.

### Exceptions:

Two-way radios must be used on all resource roads where required as required by Transportation Canada and in accordance with the Company's Road Safety Requirements and Radio Calling Protocol. Workers must ensure they remain under control of the vehicle at all times while operating a radio.

Note: These limited exceptions shall not supersede local laws regarding use of cell phones and other electronic devices.

## **7.20 Transportation**

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- Whether travel is by land, sea or air, the Contractor is obliged to follow applicable HSE laws and regulations as well as PECL and established industry guidelines for the safe transport of personnel and equipment.
- In the event that PECL is providing a means of transport for either personnel or equipment, then Contractor and sub- Contractor's personnel shall adhere to the instructions and requirements of PECL.

## **7.21 Occupational health management requirements**

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### *7.21.1 Fit for Duty*

Contractors are to establish, implement, and maintain a Fit for Duty program.

Contractor shall ensure that all its employees and sub- Contractor's employees are fit for duty when they arrive on the worksite and understand the signs of being unfit. Fit for Duty program is fulfilled when an employee's physical, physiological and psychological state allows them to perform their assigned job tasks on a continual and safe basis. Health Surveillance shall also be included which could include Hearing, Respirator Fit and Pulmonary Lung Function Testings' etc.

- Mental health and wellbeing

PECL recognizes that mental health and wellbeing is a key part of maintaining a healthy work force, and a safe worksite.

The following are ways to identify potential mental health issues, and key ways to be proactive on our worksites:

- Assess your coworkers mental/fit for duty state and bring to their attention, if noticing signs of physical, physiological and psychological stress/fatigue; and inform their supervisor;
- Encourage healthy behaviors such as good sleep, healthy eating, and requirement to abstain from drugs and alcohol while working (or at camp);
- Ensure workers have the ability to voice their concerns to their respective leaders, and if required be changed out if they are not fit for duty; and

- Encourage positive and constructive feedback on the worksite, and instill a team mentality across all services.

### *7.21.2 Fatigue management*

- Contractors are to establish, implement, and maintain a fatigue management program;
- Contractor shall ensure that risk of fatigue is understood and managed for all its employees and sub- Contractor's employees engaged in work ;
- Contractor shall track, monitor and record compliance to the specified Hours of Work as laid out by the [British Columbia Employment Standards](#) and not require or allow a worker to work excessive hours or hours harmful to the worker's health or safety.

### *7.21.3 Drug & Alcohol Policy*

The Vendor's Drug & Alcohol Policy is required to meet or exceed the most recent version of "[Canadian Model for Providing a Safe Workplace](#)"- a best practice guide from the Construction Owners Association of Alberta and Energy Safety Canada.

### *7.21.4 Disability Management Program*

PECL contractors are expected to provide workers who are fit-for-work and are in a condition to carry out their day-to-day job duties safely. Workers who are unfit for work due to injury or illness are expected to be managed under the contractor company's occupational disability management program:

- Contractors must have implemented an occupational disability management program that outlines how they will meet the employer requirements outlined in the provincial Workers Compensation Act;
- Contractors shall establish, within their health and safety program, the capability and appropriate policies, procedures, and practices to initiate and support injury case management issues and a modified work program that provides accommodation to support workers in their recovery while at work until they can return to their full duties;

**The contractor shall update PECL throughout the injury case management process notifying PECL immediately of any changes in the injured worker's status or treatment provided. A notification will be sent to PECL confirming when the injured worker has started a modified work program and when the injured worker has returned to their full duties.**

### *7.21.5 Communicable Disease/Pandemic Exposure Control*

- In the event that the risk of a communicable disease and/or pandemic escalates (e.g. COVID-19, H1N1 etc.), the Company will communicate to Contractors the applicable Statutory or Company requirements following our Communicable Disease Control Plan and through our Standard Operating Procedures (SOPs), directives and instructions;
- Contractors and sub- contractors will be required to adhere to the communicated requirements with regards to communicable disease control plan and pandemic preventive measures: e.g. COVID-19, H1N1 etc;
- In the event of any non-compliance or violation by Contractors and/or sub- Contractors on Statutory and/or PECL requirements, Contractors and/or sub-Contractors will be subject to the appropriate consequence management.
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### 7.22 Environmental Protection & Management

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Contractor's HSE program must include Environmental Protection & Management program that details the practices, procedures and control measures for effective management of environmental aspects (e.g.: use of resources, waste management, emissions and discharges management). Contractor shall identify all controls required to manage the environmental hazards, including any environmental controls identified by PECL.

#### 7.22.1 Spill prevention

- Contractor shall ensure that Contractor workers prevent spills or other releases of oil or chemical substances during the performance of the Work;
- All spills must be reported to the PECL PIC immediately. A spill is defined as an unplanned or an uncontrolled release of a substance into the environment;
- Contractor shall ensure spill prevention is practiced and in place, where necessary. E.g. chemicals / fuel are stored in durable containers, secondary containment at the chemical / fuel storage area and during handling of chemicals / fuel, etc.;
- Keep all equipment clean of drips and stains ;
- Equipment should be serviced according to the manufacturer's recommendations ;
- Use appropriate spill prevention controls when fueling.

#### 7.22.2 Water pump offs

Contractor shall ensure that the following requirements are met when dealing with surface water that needs to be released " off" site:

- ALL Water Being Released Off-site Must Be Tested Prior to Release;
- Please contact PECL PIC and request the "water test" prior to release (test results will be documented on PECL's "Surface Water Sampling Form" and retained with onsite/project documentation for five years);
- After receiving confirmation from PECL representative that water is "safe" to be released, proceed with water pump off, meeting following requirements for Discharge Area:
  - No Surface Water Bodies Nearby (creeks, streams ponds);
  - No Pooling or Accumulation of Water Being Released Off-site (if occurs, move discharge hose regularly);
  - No Erosion Occurring (must use something to dissipate energy from end of hose);
  - Landowner Approval (only if working on private land, crown is okay). PECL PIC will obtain landowner permission.

#### 7.22.3 Waste

- Contractor shall provide all information required to execute any manifests or forms required in connection with the transportation, storage, or disposal of solid and liquid wastes;
- All waste will be contained and disposed of in accordance with all applicable government regulations.

#### 7.22.4 Hazardous waste

- PECL along with all Contractors will communicate all products brought on to the site or exist on site that may be encountered during a work activity. Product SDS sheets will be provided and or issued to PECL, Mechanical Vendor and the medic(s) on site so that response can be initiated where required in accordance with the SDS sheet(s);
- Contractor shall also ensure its personnel are adequately trained in Hazardous Waste management. A Competent Person/company appointed person shall be available at site.

### 7.22.5 *The License to Transport*

The License to Transport section applies to all transportation vendors that will be hauling hazardous waste or products from a PECL worksite.

- Ensure the License to Transport is current and carried with the transporter;
- Ensure, to the best of your knowledge, that the manifest is correct prior to leaving the site.

### 7.22.6 *Biodiversity*

Contractors shall ensure they exercise the necessary care to protect and preserve the environment, including Flora, Fauna, and other natural resources or assets. This includes mitigating potential adverse impacts to the environment related to the Work, including proper use of oil and chemical storage tanks and containment mechanisms, and proper disposal of all hazardous and non-hazardous wastes such as oil, chemicals, sewage, and garbage. Contractor shall ensure that there is no hunting or disturbance of wildlife, birds or fish. If an incident involving wildlife occurs the contractor will report immediately to the PECL PIC/Site representative.

### 7.22.7 *Archeological*

The Contractor shall ensure that any potential archeological finds or fossils found at work sites are protected from damage or disturbance. The contractor shall immediately stop work and report to the PECL site representative. Work will remain suspended pending further instructions from Company.

## 8. Master Glossary

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- **Administrative Control:** Administrative controls (or work practice controls) are changes in work procedures such as written safety policies, rules, supervision, schedules, and training with the goal of reducing the duration, frequency, and severity of exposure to hazardous chemicals or situations.
- **ALARP:** ALARP stands for "as low as reasonably practicable", and is a term often used in the regulation and management of safety-critical and safety-involved systems. The ALARP principle is that the residual risk shall be reduced as far as reasonably practicable.
- **Camp:** A safe, secure and productive work environment and accommodations for individuals working or visiting Company worksites
- **Canadian Model:** The most recent version of the Canadian Model released by the Construction Owners Association of Alberta (COAA). The Canadian Model provides industry with recommendations for Drug and Alcohol Testing procedures tailored specifically for heavy industrial worksites.
- **Company:** PETRONAS Energy Canada Ltd (PECL) and its affiliates and subsidiaries.
- **Company Sites (Worksite/Site):** Includes, but is not limited to, all land, facilities, operations, camps, vehicles, equipment and property used for the purpose of performing the business of The Company(owned, occupied, leased or controlled by the Company). Worksites include any work location to which Workers have been assigned, including any offsite work location at which work is being performed.
- **Confidential:** This classification applies to all Information and Records that, for internal Company use, require confidentiality, integrity and restricted access controls on a need-to-know basis. This includes both proprietary and personal Information.
- **Confined Space:** Confined Space", except as otherwise determined by the Board, means an area, other than an underground working, that
  - is enclosed or partially enclosed,

- is not designed or intended for continuous human occupancy,
- has limited or restricted means for entry or exit that may complicate the provision of first aid, evacuation, rescue or other emergency response service, and
- is large enough and so configured that a worker could enter to perform assigned work;
- **Confined Space Entry (CSE):** Confined Space Entry involves the physical breaking of a plane or surface by a worker for the means of gaining access and entering into a space to perform a work activity.
  - A confined space is an enclosed or partially enclosed area that is big enough for a worker to enter. The space may be enclosed on all sides (for example, a bin or tank), or as few as two sides (for example, an enclosed conveyor). Confined spaces are not designed for someone to work in regularly. They are places where entry may be needed from time to time for inspection, cleaning, maintenance, or repair.
- **Consultant:** Third-party resources engaged primarily to support office functions. Typically hired to provide professional services and are usually temporary, short term, and/or project based.
- **Contract Owner:** Is the person within the Company who is responsible for managing all aspects of the Contract, from the planning phase till contract close-out.
- **Contractor (Vendor/Supplier):** Third-party resources engaged primarily to support field functions.
- **Corrective Action:** An action taken to eliminate the causes of an existing nonconformity, or other undesirable situation, in order to prevent recurrence.
- **Drug or Drugs:** Includes any substance, chemical or agent the use or possession of which is unlawful in Canada or requires a personal prescription or authorization from a licensed treating physician, or the use of which is regulated by legislation such as marijuana/ cannabis, or any other psychoactive substance, and any non-prescription medication lawfully sold in Canada, and drug paraphernalia. **Embedded Contractors:** Contractor personnel who are working under direct supervision of PECL (eg -"contract" Operators, mechanics etc working for operation teams) and /or Consultant acting on the behalf of PECL (example -Drilling, Completion & Construction Supervisors).
- **Emergency:** An adverse situation that has an impact on people, environment, asset and reputation and requires the activation of emergency team.
- **Emergency Response Plan (ERP):** A plan of action for the efficient deployment and coordination of services, agencies and personnel to provide the earliest possible response to an emergency. Refer to the Health, Safety, Regulatory, and Environment Policy.
- **Engineering Control:** Engineering controls are methods that are built into the design of a plant, equipment or process to minimize the hazard. Engineering controls are a very reliable way to control worker exposures as long as the controls are designed, used and maintained properly.
- **Equipment:** Includes all vehicles and machinery which are owned, leased or otherwise controlled by the Company. This also includes Company provided transportation.
- **ERP:** Emergency Response Plan.
- **Field Security Coordinators:** Company security coordinators in the field who focus on protecting the Company's people, assets/facilities, environment and reputation. They also enforce the Company's Rules of Work Procedure, as delegates of the Company's Manager of Corporate Security.
- **Fit-for-Duty:** The status of Workers who are mentally and physically able to perform the duties of their position, as required. Additionally, being able to safely and acceptably perform assigned

duties and any task under the given working conditions without any limitations due to the use, misuse or after-effects of Alcohol, Drugs or Medications.

- **Ground Disturbance:** A ground disturbance refers to any work, operation or activity that results in the penetration of the ground, whether using mechanical excavation or hand tools, including excavation, digging, trenching, plowing, pipe or cable drilling, vertical and horizontal auguring, tunneling or boring, ditch shaping, grading, topsoil stripping, land levelling, tree planting, blasting, Vibroseis, pipe pushing, rock picking, subsoil aeration, and driving bars, posts, or anchors.
- **Harassment:** Any unwanted physical or verbal behavior that offends or humiliates an individual.
- **Hazard:** Any source of potential damage, harm or adverse health effects.
- **Health, Safety, Security, and Environment (HSE) Management System:** The Company structure, roles and responsibilities, policies, practices, procedures, processes, and resources for implementing health, safety, security, and environment management, including compliance with regulatory requirements.
- **Health, Safety and Environment (HSE) Regulatory Requirements:** Requirements and/or conditions imposed by municipal, provincial, or federal regulatory agencies that carry the force of law prescribed in:
  - Statutes;
  - Regulations made pursuant to Statutes; and
  - Bylaws;
  - Regulatory instruments include, but not limited to, the following:
  - Approvals;
  - Authorizations;
  - Environmental Assessment Certificate (British Columbia)
  - Leases;
  - Licenses;
  - Permits; and
  - Administrative orders (e.g., Stop Work Order, Pollution Prevention Order)
- **Hearing Protection Equipment:** Hearing Protection Equipment refers to devices used to protect the ear, either externally from elements such as cold, intrusion by water and other environmental conditions, debris, or specifically from noise. High levels of exposure to noise may result in noise-induced hearing loss. Measures to protect the ear are referred to as hearing protection. In the context of work, adequate hearing protection is that which reduces noise exposure to below 85 dBA over the course of an average work shift of eight hours.
- **HSE Coordinator:** Health, Safety and Environment Coordinator (HSE) is a discipline and specialty that studies and implements practical aspects of environmental protection and safety at work.
  - From a health & safety standpoint, the HSE Coordinator is involved in creating organized efforts and procedures for identifying workplace hazards and reducing accidents and exposure to harmful situations and substances. This also includes training of personnel in accident prevention, accident response, emergency preparedness, and use of protective clothing and equipment.
  - From an environmental standpoint, the HSE Coordinator is involved in creating a systematic approach to complying with environmental regulations, such as managing waste or air emissions all the way to helping sites reduce the company's carbon footprint.
- **Immediately Dangerous to Life or Health:** The National Institute of Occupational Safety and Health (NIOSH) defines an immediately dangerous to life or health condition as a situation" that

poses a threat of exposure to airborne contaminants when that exposure is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment." The IDLH limit represents the concentration of a chemical in the air to which healthy adult workers could be exposed (if their respirators fail) without suffering permanent or escape-impairing health effects.

- **Incident:** An abnormal or unplanned event that affects people, environment, asset and reputation, requires attention and has the potential to precipitate an emergency, crisis and/or business disruption.
- **Job Hazard Assessment (JHA):** A job hazard assessment (JHA) is a procedure which helps integrate accepted safety and health principles and practices into a particular task or job operation. In a JSA, each basic step of the job is to identify potential hazards and to recommend the safest way to do the job. Other terms used to describe this procedure are job safety analysis (JSA) and job hazard breakdown.
- **Key Performance Indicator (KPI):** A measurable value that demonstrates how effectively the Company is achieving key business objectives.
- **Lockout-Tagout (LOTO) :** A safety procedure which is used in industry and research settings to ensure that dangerous machines are properly shut off and not able to be started up again prior to the completion of maintenance or servicing work. It requires that hazardous energy sources be "isolated and rendered inoperative" before work is started on the equipment in question.
- **Management of Change (MOC):** A systematic approach to preparing and supporting individuals, teams, and organizations in making change.
- **Mobile Devices:** Any mobile hardware device (and related software) capable of storing data and connecting to a Company network including but not limited to:
  - Smartphones;
  - Other mobile/cellular phones;
  - Tablet computers;
  - E-readers; and
  - Portable media devices.
- **Naturally Occurring Radioactive Material (NORMS):** Naturally occurring radioactive material (NORM) is material found in the environment that contains radioactive elements of natural origin. NORM primarily contains uranium and thorium (elements that also release radium and radon gas once they begin to decay) and potassium. These elements are naturally decaying and are considered a primary contributor to an individual's yearly background radiation dose.
- **Near Miss ("NM"):** A Near Miss is an event that could have caused harm to people, damage to property, Company reputation or the environment, but which did not.
- **Off Road Vehicles:** Runs on 4 or more wheels or is self-propelled by means of 2 or more endless belts driven in contact with the ground;
  - At the time the Vehicle was manufactured, was not designed to conform to the standards prescribed under the Motor Vehicle Safety Act (Canada) for motor Vehicles designed for use on a highway, but does not include an agricultural or industrial Vehicle; and
  - Include snowmobiles.
- **OGC:** The BC Oil and Gas Commission (OGC) is an independent regulatory agency with responsibility for overseeing the oil and gas operations in British Columbia. This includes exploration, development, pipeline transportation and reclamation activities.

- **Orientation Session:** A meeting conducted by The Company's representative for the purpose of providing general Site safety information and that all Workers and Contractors accessing the Site are required to attend.
- **PECL:** PETRONAS Energy Canada Ltd.
- **Permit Issuer:** Trained and competent individual authorized by the Company to approve and issue the PTW as detailed in the Work Site Management Procedure.
- **Permit Receiver:** Trained and competent individual authorized by the Company to conduct JHA, develop appropriate work plans and conduct the activities as specified by the PTW as detailed in the Work Site Management Procedure.
- **Permit to Work (PTW):** Permit to Work (PTW) refers to management systems used to ensure that work is done safely and efficiently. These are used in hazardous industries and involve procedures to request, review, authorize, document and most importantly, de-conflict tasks to be carried out by frontline workers. A permit to work system is a formal system stating exactly what work is to be done, where, and when. Permits are effectively a means of communication between site management, plant supervisors and operators, and those who carry out the work.
- **Personal Harassment:** Behavior which is demeaning or embarrassing towards an individual or group of individuals, although it is not unlawfully sexual or discriminatory in nature.
- **Personal Information:** Any information about an identifiable individual or that permits an individual to be identified, such as name, date of birth, marital status, dependents, beneficiaries, home or mailing address, personal telephone numbers, personal email addresses, emergency contact information, social insurance number, bank account numbers, other ID numbers, income, employment or education history, credit records, loan records, medical records, and financial history. It does not include an individual's business contact information (i.e., name, title, business telephone number, address, e-mail address or fax number) when that information is used to contact an individual in relation to his/her business responsibilities.
- **Personal Mobile Device:** Mobile device that is not issued by the Company but with which a User may also access the Company's Computing Environment for business purposes.
- **Personal Protective Equipment (PPE):** Personal protective equipment (PPE) refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection. The hazards addressed by protective equipment include physical, electrical, heat, chemicals, biohazards, and airborne particulate matter.
- **Policy:** A documented statement, set of broad goals, rules or principles issued document by management outlining the mandatory boundaries within which Employees must act, and what must be done to affect control over the Company and its business activities. This document effectively states what the Company's expected behaviors and guiding principles are that all Employees must adhere to.
- **Preventative Control:** A barrier that prevents a Cause from becoming a Risk Event (i.e., reduces likelihood of a Risk).
- **Prime Contractor:** Prime contractor is the chief contractor who has a contract with the owner of a project or job, and has the full responsibility for its completion (while operating within its own HSE-MS separate from the Company). A prime contractor undertakes to perform a complete contract, and may employ (and manage) one or more subcontractors to carry out specific parts of the contract. PECL will transfer the ownership under the regulations.
- **Pressure Safety Valve (PSV):** is a type of valve used to quickly release gasses from equipment in order to avoid over pressurization and potential process safety incidents.

- **Regulatory Bodies:** An organization authorized to create policy or make decisions on applications, monitoring for compliance assurance and enforcement of legislation for all aspects of energy resource activities. This includes provincial and federal organizations including, but not limited to the BC Oil and Gas Commission, Alberta Energy Regulator, Provincial Ministries of Environment, Natural Gas, and Forestry and Environment Canada.
- **Regulatory Compliance:** Meeting the specifications and requirements in order to adhere to a rule, policy, law or standard set by regulatory bodies.
  - Actual or potential violations relating to accounting, internal financial controls, accurate books and records, or auditing matters;
  - Actual or potential violations of applicable laws, rules or regulations including securities laws; and
  - Actions materially inconsistent with any Company Policy.
- **Process Safety:** It is a disciplined framework for managing the integrity of hazardous operating systems and processes by applying good design principles of engineering and operating practices.
- **Representative:** An Employee, duly appointed agent, professional advisor, Consultant, or independent Contractor assigned to represent the department.
- **Respiratory Protection Equipment:** RPE (respirators and breathing apparatus) is used to protect workers when working with hazardous substances, such as gases, solvents, powdered chemicals and sprays. RPE comes with various forms of face-piece, such as helmets, visors, hoods or masks.
- **Risk:** The uncertainty that affects the achievement of objectives.
- **Risk Action Plan:** A task or set of steps to bring a specific risk in line with its stated Risk Target.
- **Risk Assessment:** Overall process of risk identification, risk analysis and risk evaluation, including a study of vulnerabilities, threats, likelihood, loss and impact.
- **Risk Identification:** Risk identification is the process of discovering, defining, describing, documenting and communicating potential risks that may adversely affect the business or operation of the company.
- **Risk Impact:** Result or effect of a risk occurring. There are various impact types and each type has a range of impact ratings. Descriptions are provided for each rating.
- **Risk Likelihood:** Possibility that a risk will occur. Likelihood ratings are assigned based upon descriptions for each rating.
- **Scope of Work (Task/Service):** A document that specifies all the criteria and details needed for the provision of Materials and/or Services. This includes any deliverables, requirements, standards to abide by, milestones, etc
- **Sexual Harassment:** Any conduct, comment, gesture, or contact of a sexual nature that is likely to cause offense or humiliation to any Employee; or that might, on reasonable grounds, be perceived by that Employee as placing a condition of a sexual nature on employment or on any opportunity for training or promotion.
- **Safe Operating Procedure (SOP):** Document that is used to identify hazards and document risk controls for certain work activities.
- **Sub Contractor:** Any additional contractor brought to site by a PECL employed Contractor, during the execution of an agreed workscope, this includes maintenance personnel and companies delivering materials or equipment to site not directly contracted by PECL.
- **Supplier:** An organization that provides specific good(s) and/or service(s) to the Company.

- **Supply Chain Management (SCM):** The department and function within the company managing supply chain activities.
- **Tailgate Safety Meeting:** A tailgate meeting is an informal safety meeting, which is generally conducted at the job site prior to the commencement of a job or work-shift. Job supervisors can draw attention to hazards, processes, equipment, tools, environment and materials to inform all workers of the risks in their surroundings.
- **TDG :** Transportation of Dangerous Goods (TDG) Regulations is to promote public safety when dangerous goods are being handled, offered for transport or transported by road, rail, air or water (marine).
- **Unsafe Act (UA):** An unsatisfactory behavior that has the potential to cause, has caused or contributed to an Incident.
- **Unsafe Condition (UC):** An unsatisfactory physical condition in the workplace that has the potential to cause, has caused or contributed to an Incident.
- **Vehicle:** Includes but not limited to ATV, mobile crane, UTV, snowmobile, car, truck, semi-trailer, mobile man lift, forklift, construction Vehicles (dozers, etc.).
- **Visitor:** An individual who visits a Site on a temporary basis. Visitors are not permitted to perform "hands-on" work, and must be under the supervision of a Company-authorized Host. For the purposes of this definition "hands-on" work includes any work performed with the use of tools, equipment, or other implements involving manual labor, or as otherwise determined on a case-by-case basis by a Company Safety Officer, or a member of the Company field management team.
- **Work:** All the Work that Contractor is required to carry out in accordance with the terms of the Contract, including services and the provision, delivery, use, inspection, repair, storage and transport of all goods and equipment, at, on, under, above, in or through a Company Worksite. For further certainty, this excludes the providers and suppliers of goods and equipment who do not enter a Worksite.
- **Work Order:** A document used to order work, which records the Scope of Work, responsibilities, and activities undertaken to complete the work from initiation to completion.
- **Work Plan:** A work plan is an outline of a set of goals and processes by which a team and/or person can accomplish those goals, and offering the worker(s) a better understanding of the scope of the project. Work plans help worker(s) stay organized while working on projects. Through work plans, you break down a process into small, achievable tasks and identify the things you want to accomplish.
- **Worker:** Any Employee, Contractor or Consultant.
- **Worker Representative:** A Worker who represents and defends the interests of his or her fellow Workers.
- **Worker's Compensation Board (WCB):** Form of insurance providing wage replacement and medical benefits to employees injured in the course of employment in exchange for mandatory relinquishment of the employee's right to sue his or her employer for the tort of negligence.
- **Workplace Hazardous Materials Information System (WHMIS):** The Workplace Hazardous Materials Information System (WHMIS) is Canada's national hazard communication standard. The key elements of the system are hazard classification, cautionary labelling of containers, the provision of (material) safety data sheets ((M)SDSs) and worker education and training programs.
- **Workplace Violence:** Any acts or threats of violence within the workplace.
- **WorkSafeBC:** The Workers' Compensation Board of British Columbia, operating as WorkSafeBC, is a statutory agency that came into existence in 1917, after the provincial legislature put into force legislation passed in 1902.[2] This legislation is known as the Workers Compensation Act.[3]



WorkSafeBC's mandate includes prevention of occupational injury and occupational disease, which WorkSafeBC accomplishes through education, consultation, and enforcement. It carries out workplace inspections and investigates serious incidents such as fatalities. The Workers Compensation Act [4] assigns the authority to make the Occupational Health and Safety Regulation of British Columbia.

- **ZeTo Rules:** PECL's Zero Tolerance Rules.