

**SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS CONTRACT**

**SCHEDULE 10**

**SAFETY**

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# SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS CONTRACT

## SCHEDULE 10

### SAFETY

#### 1 INTERPRETATION

##### 1.1 Definitions

In this Schedule 10 [Safety], in addition to the definitions set out in Schedule 1 [Definitions and Interpretation]:

“**Construction Safety Officer**” has the meaning set out in Section 2.5 of this Schedule 10 [Safety];

“**Contractor’s Work Area**” means the area where the Contractor will perform the Work as defined by the Contract Documents;

“**CSMP**” means the Site C Clean Energy Project Construction Safety Management Plan dated June 5, 2015, a copy of which has been provided to the Contractor by BC Hydro prior to the Effective Date;

“**CSSMP**” means the Contractor Site Safety Management Plan referred to in BC Hydro’s CSMP. The CSSMP can be considered equivalent and interchangeable with the term “SSMP”, which is required from all contractors prior to starting work, for detailing and controlling site hazards during construction activities;

“**Emergency Response Plan**” has the meaning set out in Section 5.1 of this Schedule 10 [Safety];

“**Hazardous Material**” means substances defined in Part 5 of the OSHR and WHMIS legislation;

“**Multiple Employer Workplace**” has the meaning set out in Section 118 of the *Workers Compensation Act* (British Columbia) and in WorkSafeBC Regulation Part 20.3 (2) “a work location has overlapping or adjoining work activities of 2 or more employers that create a hazard to workers”;

“**Notice of Failure to Comply**” has the meaning set out in Section 5.5(a) of this Schedule 10 [Safety];

“**Occupational Health & Safety Management Program**” or “**OHSMP**” has meaning set out in Part 3.3 of the Occupational Health and Safety Regulation (BC);

“**OHSR**” means the *Occupational Health and Safety Regulation* (British Columbia);

“**Prime Contractor**” has the meaning set out in Section 118 of the *Workers Compensation Act* (British Columbia);

“**Qualified**” has the meaning ascribed to it in Part 1 of the OHSR;

“**Qualified Site Safety Coordinator**” has the meaning set out in Section 2.4 of this Schedule 10 [Safety];

“**Safe Work Procedures**” has the meaning set out in Section 3.2 of this Schedule 10 [Safety];

“**Safety Area**” has the meaning set out in Section 2.1 of this Schedule 10 [Safety];

“**Safety Audits and Inspections**” has the meaning set out in Section 7.1 of this Schedule 10 [Safety];

“**Safety Laws**” has the meaning set out in Section 3.1(a) of this Schedule 10 [Safety];

Supply and Installation of Turbines and Generators – Schedule 10 [Safety]

“**Safety Minimum Requirements**” or “**SMR**” has the meaning set out in Section 3.1(b) of this Schedule 10 [Safety];

“**Site Safety Management Plan**” or “**SSMP**” has meaning set out in Section 3.1 of this Schedule 10 [Safety];

“**Work Area**” means any area at the Site in which work will be performed for the construction of the Project;

“**WorkSafeBC**” means the Workers Compensation Board of British Columbia; and

“**WPP**” has the meaning set out in Section 3.6 of this Schedule 10 [Safety].

## **2      GENERAL OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS**

### **2.1      Safety Areas**

For the purposes of safety, BC Hydro may divide the Site into a number of areas (each a “**Safety Area**”) and designate a specific contractor as the Prime Contractor for each Safety Area. A Safety Area may be comprised of the Contractor’s Work Area, Others’ work areas, an area of ancillary use such as a storage area or laydown area and roads and access lands. Any Safety Area may be a Multiple Employer Workplace such that more than one contractor may be required to use, perform work in or pass through the Safety Area.

The drawings attached at Appendix 10-2 [Safety Area Drawings] describe designated Safety Areas at the Site that will be in effect during the time periods as specified on the drawings. The Contractor will perform the Work in accordance with the safety requirements as required by the applicable Prime Contractor for the Safety Area in which the Work is being performed, and will fulfill all obligations and requirements of a contractor working under a Prime Contractor as required by Safety Laws. If the Contractor needs to pass through other Safety Areas, the Contractor will follow all safety instructions of the Prime Contractor for those Safety Areas.

### **2.2      General Duties of the Contractor**

The Contractor will:

- (a) ensure the health and safety of all workers working for the Contractor, and any other workers present at the workplace at which that the Contractor’s Work is being carried out;
- (b) comply with the *Workers Compensation Act* (British Columbia), the OHSR and any applicable orders;
- (c) remedy any workplace conditions that are hazardous to the health or safety of the Contractor's workers;
- (d) ensure that the Contractor’s workers are made aware of all known or reasonably foreseeable health or safety hazards to which they are likely to be exposed by their work, comply with the *Workers Compensation Act* (British Columbia), the OHSR and any applicable orders, and are made aware of their rights and duties under the *Workers Compensation Act* (British Columbia) and the OHSR;
- (e) provide to the Contractor's workers the information, instruction, training and supervision necessary to ensure the health and safety of those workers in carrying out their work and to ensure the health and safety of other workers at the workplace;

- (f) maintain the workplace in a manner that ensures the health and safety of persons at or near the workplace. At all times have full regard for the safety of all persons on the Safety Area (whether such persons are present on the Safety Area lawfully or not) and will keep the Safety Area in a manner and in an orderly state that ensures the safety of such persons and that is appropriate to the avoidance of danger in the Safety Area of a Prime Contractor; and
- (g) prior to leaving the area at the conclusion of work in the Contractor's Safety Area, the Contractor will take all practical measures to ensure the Safety Area is free of all hazards created by the work and all safeguards are in place to protect the health and safety of persons entering the Safety Area.

In the event that it is not possible to implement all of the safeguards required to eliminate the hazards, the Contractor will communicate this information to the Prime Contractor.

### 2.3 Contractor's Duties to the Prime Contractor

The Contractor will:

- (a) take all steps or measures necessary, through such arrangements as are appropriate, to comply with the directions of the Prime Contractor;
- (b) coordinate the activities of all of the Contractor's workers in the Safety Area so that the activities of the Contractor's workers do not pose any risk to the workers of another employer;
- (c) comply with applicable components of an operating plan that may be agreed to between the Prime Contractor and a third-party regarding rail operations within the Safety Area;
- (d) establish and maintain a system or process that will ensure compliance with the Safety Laws by the Contractor, the Contractor's workers and any of the Contractor's subcontractors in respect of the Safety Area; and
- (e) identify and document to the Prime Contractor any work activities at the workplace where there is a known or reasonably foreseeable risk to workers.

### 2.4 Qualified Site Safety Coordinator

Prior to the commencement of any construction within the Safety Area, the Contractor will appoint a Qualified person (the "**Qualified Site Safety Coordinator**") to coordinate the Contractor's health and safety activities for the Safety Area with respect to the work and deliver to Hydro's Representative written notice of the designation of the Qualified Site Safety Coordinator. The duties of the Qualified Site Safety Coordinator will be:

- (a) establishing and maintaining working relationships with WorkSafeBC and BC Hydro;
- (b) prior to the commencement any Construction prepare and deliver under the Review Procedure a schedule of safety activities demonstrating implementation of the Contractor's Site Safety Management Plan;
- (c) identifying and documenting all new hazards that arise during the performance of the Work for the Contractor's and Subcontractor's workers;
- (d) identifying and documenting any activities at the workplace that could create a known or reasonably foreseeable risk to workers and informing the Prime Contractor of the activities and the hazards;



- (e) preparing or causing to be prepared a set of written construction procedures designed to protect the health and safety of workers at the Safety Area;
- (f) conducting documented site safety inspections at a frequency that prevents the development of unsafe conditions or procedures in the Safety Area; and
- (g) advising the Prime Contractor of any accidents or incidents that occur in the Safety Area including those that must be reported to WorkSafeBC.

## 2.5 Construction Safety Officers

The Contractor will appoint a sufficient number of Qualified construction safety officers (each a “**Construction Safety Officer**”), having responsibility for the identification and control of potential safety Hazards for the work, in accordance with applicable Safety Laws. The Contractor will ensure that during the performance of all construction activities on the Safety Area, at least one Construction Safety Officer is at the Safety Area and available for every 200 construction workers. A Construction Safety Officer will demonstrate the requisite degree of training and competency to act in that capacity, as required by WorkSafeBC.

## 3 SITE SAFETY MANAGEMENT PLAN

### 3.1 Preparation and Submission

Within 60 days after the Effective Date, and in any event, at least 20 days before commencing any Work at the Site, the Contractor will prepare and submit the Contractor’s Site Safety Management Plan (“**Site Safety Management Plan**” or “**SSMP**”) to the Prime Contractor’s representative for review. The SSMP will be prepared by a Qualified Person who will certify that the SSMP:

- (a) has been prepared in accordance with the requirements of *Workers Compensation Act* (British Columbia) and OSHR and all applicable Laws and the Safety Regulations (the “**Safety Laws**”);
- (b) meets the minimum standards of health and safety for each specified component of the Work, as determined by the applicable safety policies or standards (the “**Safety Minimum Requirements**” or “**SMR**”);
- (c) is in compliance with the Safety Standards and Regulations described in item 3 of Appendix 2-1 [BC Hydro’s Policies and Procedures];
- (d) is in compliance with Good Industry Practice and Appendix 10-1 [Safety Minimum Requirements];
- (e) addresses overall management of occupational safety, health and wellness and addresses mitigation of any risks due to occupational health and safety hazards associated with the Project, the Contractor’s Work Area and the performance of the Work. The SSMP will define the safety purpose, responsibilities, strategies and plans that direct the Contractor, its employees, its Subcontractors and its Subcontractors’ employees with a key focus made to those components of the Work, including cooperation with Other Contractors, BC Hydro and other persons at the Site;
- (f) addresses the development of emergency response plan in communication with the Prime Contractor;
- (g) contains the ‘Life Saving Rules’ as described in Section 3.3 of this Schedule 10 [Safety];
- (h) includes a comprehensive physical and operational security program; and

- (i) includes the Safe Work Procedures as required by Section 3.2 of this of this Schedule 10 [Safety].

### 3.2 Safe Work Procedures

Prior to commencing any activities at the Site and as part of the SSMP, the Contractor will develop and submit a set of written instructions identifying the health and safety hazards associated with the performance of each type of activity associated with the performance of the Work ("**Safe Work Procedures**") to the Prime Contractor's representative for review as to completeness. The Contractor will engage a Qualified Person knowledgeable in the applicable WorkSafeBC Regulation and work procedures to prepare each set of Safe Work Procedures. Each set of Safe Work Procedures will:

- (a) address all Site specific safety hazards and work procedures necessary to address those hazards for the safe performance of the specific type of Work activity;
- (b) be prepared in accordance with the requirements of the CSMP and the Contractor's OSH Program;
- (c) include safe work procedures and exposure control plans applicable to the Site and the performance of the specific type of Work activity;
- (d) include reference to hot work precautions including a permitting system;
- (e) be prepared in accordance with WorkSafeBC requirements;
- (f) be consistent with Appendix 10-1 [Safety Minimum Requirements]; and
- (g) specifically identify the applicable procedures in the event of an accident or safety violation.

The Contractor will review and amend the Safe Work Procedures as necessary to reflect changes to work procedures. The Contractor will submit the amendments to the Safe Work Procedures to the Prime Contractor's representative for review as to completeness.

The Contractor will implement and comply with the Safe Work Procedures, and require all Subcontractors to comply with the Safe Work Procedures, prepared and as may be amended from time to time in accordance with the requirements of this Schedule 10 [Safety].

### 3.3 Life Saving Rules

The Contractor will ensure compliance with the following lifesaving rules by all the Contractor's workers and subcontractors on the Safety Area as part of the Site Safety Management Plan:

- (a) maintain your Limits of Approach;
- (b) ensure there is a Safety Protection Guarantee or Lock out in place and check that it is appropriate for your work;
- (c) test for hazardous energy;
- (d) ensure that Worker Protection Grounding/Bonding is applied;
- (e) protect yourself from falling when working at height;
- (f) maintain a safe atmosphere in a confined space and ensure you can be rescued;

- (g) prevent harmful exposure to known carcinogens, toxins and bio-hazards;
- (h) do not work while under the influence of alcohol or drugs; and
- (i) adjust your driving to the weather and road conditions.

### 3.4 Amendment of SSMP

The Contractor will review and amend the SSMP when hazards change to ensure that the SSMP at all times complies with the requirements set out in Section 3.1 of this Schedule 10 [Safety]. The Contractor will submit the amendments to the SSMP to the Prime Contractor's representative for review.

### 3.5 Compliance to SSMP

The Contractor will implement and comply with the SSMP, and require all Subcontractors to comply with the SSMP, prepared and as may be amended from time to time in accordance with the requirements of this Schedule 10 [Safety].

### 3.6 Safety Requirement for Work Connected to the Electrical Grid

Before any station equipment can be connected to the electrical grid and at such time that BC Hydro's representative advises, the Contractor will ensure all workers are trained to the level of knowledge set out in and comply with BC Hydro's Safety Practice Regulations (SPR), Work Protection Practices ("WPP"), and lockout procedures. The Contractor will train or cause to be trained all persons engaged in the performance of the Work to a minimum of Category B under WPP before the equipment is connected to the grid and from connection time forward all persons working on the equipment must maintain WPP certification to the level required by the work being done. Equipment that has been deemed to be connected to the electrical grid includes equipment that, while not explicitly connected to the electrical grid, can affect the operation of the electrical grid.

### 3.7 Isolation

If a Contractor requires a change to the equipment isolation and lockout procedures to accommodate the performance of the Work on equipment that has been deemed to be connected to the electrical grid, the Contractor will submit a lockout procedure change request to the Prime Contractor's representative a minimum of three days in advance of the required change. BC Hydro will perform the requested switching and isolation at no charge to the Contractor. Notwithstanding the foregoing, BC Hydro will not be responsible for any costs associated with any delays or interruptions of the Work arising from changes to isolation of equipment requested by the Prime Contractor.

## 4 WORKSAFEBC

### 4.1 WorkSafeBC Requirements

Within 60 days after the Effective Date but, in any event, before commencing any Work at the Site, and at any time on written request from Hydro's Representative, the Contractor will deliver to BC Hydro a statement from WorkSafeBC that each Subcontractor is registered and paying its premiums as required.

### 4.2 Indemnity for WCB Non-Compliance

If the Contractor or anyone employed by or through the Contractor in the performance of any Work does not comply with the requirements of the *Workers Compensation Act* (British Columbia), including payment and deduction and remittance of any and all contributions, premiums, fees, assessments and charges required to be made thereunder, the Contractor will indemnify BC Hydro from any cost, loss, liability or obligation which BC Hydro may incur as a result.

#### 4.3 Failure to Comply with WorkSafeBC Requirements

If at any time the Work or portion of the Work is stopped because the Contractor, or any Subcontractor fails or refuses to comply with an order issued pursuant to the *Workers Compensation Act* (British Columbia), then such failure or refusal will be deemed to be a default to which the provisions of Section 13.1 of Schedule 2 [Design and Construction Protocols] will apply.

### 5 **SAFETY REQUIREMENTS**

#### 5.1 Emergency Response Plan

The Contractor will prepare an emergency response plan (the “**Emergency Response Plan**”) which:

- (a) outlines the warning systems for evacuation that will be in place;
- (b) provides the Contractor’s (including all Subcontractors) emergency response protocol and procedures for safely managing potential emergency situations within the Safety Area; and
- (c) defines the detailed safe, effective and timely evacuation procedures in the event of an emergency at the Site.

The Contractor will submit the Emergency Response Plan to the Prime Contractor’s representative for review as to completeness.

#### 5.2 Amendment of Emergency Response Plan

The Contractor will review and amend the Emergency Response Plan as required during the performance of the Work so that it at all times covers the Work being performed. The Contractor will submit the amendments to the Emergency Response Plan to the Prime Contractor’s representative for review as to completeness.

#### 5.3 Compliance to Emergency Response Plan

The Contractor will implement and comply with the Emergency Response Plan, and require all Subcontractors to comply with the Emergency Response Plan, prepared and as may be amended from time to time in accordance with the requirements of this Schedule 10 [Safety].

#### 5.4 Safety Training

The Contractor will, with respect to the performance of the Work, and will ensure that subcontractors with respect to their work, develop, implement, monitor and update any and all training programs required to train their employees in the hazards of the site and Work and the safe and proper performance of the Work. A safety training program will:

- (a) comply with all requirements of WorkSafeBC;
- (b) be delivered by Qualified persons;
- (c) include orientation of all workers;
- (d) identify and address both general and task specific hazards;
- (e) address the rights, obligations and duties of all persons engaged in the performance of the Work with respect to occupational health and safety;

- (f) address the potential consequences of non-compliance with the Safety Management Plan;
- (g) be tailored to the tasks, duties and responsibilities of each person engaged in the performance of the Work;
- (h) include mechanisms for participants to evaluate and provide feedback with respect to the safety training sessions;
- (i) be modified as and when required to respond to participant evaluations and feedback;
- (j) be provided free of charge to all persons engaged in the performance of the Work during normal working hours; and
- (k) include such tests as may be necessary to ensure that participants understand the material covered in the safety training sessions.

The Contractor will maintain list or database of all personnel with required and completed training, available at reasonable intervals for examination by others.

#### 5.5 Failure to Comply

If the Prime Contractor determines in its reasonable discretion that any employer or an employer's worker performing work within the Safety Area is creating an unsafe or harmful condition or is doing or failing to do something that constitutes an unsafe or harmful act, or has failed to comply with the *Workers Compensation Act* (British Columbia), the OHSR, BC Hydro Safety Standards and Regulations or the Prime Contractor's health and safety program, and that on written notice from the Prime Contractor to the employer responsible for such of such condition, act or failure that the employer has failed or refused to take action to correct the condition, act or failure, including any condition, act or failure of a worker, then:

- (a) the Prime Contractor may issue a written notice ("**Notice of Failure to Comply**") to the applicable employer stipulating in reasonable detail the basis for the issuance of the Notice of Failure to Comply, with a copy to Hydro's Representative;
- (b) on receipt of a Notice of Failure to Comply BC Hydro may, in reliance on the Notice of Failure to Comply, take whatever action it deems necessary to reduce or eliminate risk to workers;
- (c) on rectification of the condition, act or failure set out in a Notice of Failure to Comply issued by the Prime Contractor, the Prime Contractor will withdraw the Notice of Failure to Comply by endorsing on a copy thereof confirmation of the rectification, and the Prime Contractor will deliver a copy of the endorsed Notice of Failure to Comply to the applicable employer and to Hydro's Representative, and in reliance on such receipt BC Hydro may take steps to permit the resumption of work; and
- (d) BC Hydro will be deemed to have relied on the terms of and the reasons set out in the Notice of Failure to Comply, and a subsequently endorsed Notice that the condition has been rectified, notwithstanding any subsequent investigation or inquiry of the matter by BC Hydro, which BC Hydro may but will not be obligated to undertake, and the Prime Contractor will indemnify and hold harmless BC Hydro in connection with any and all Claims arising in connection with the issuance of any Notice of Failure to Comply by the Prime Contractor, or the subsequently endorsed Notice, and any acts or omissions of BC Hydro in reliance on such Notices.

## **6 SAFETY MEETINGS**

### **6.1 Compliance, Participation, Attendance and Documentation**

The Contractor will provide all documents, attend all meetings and conduct activities as required by the OSHR. The Contractor will cause its representative and its Subcontractors' senior site representative to attend all safety meetings.

### **6.2 General Meetings**

The Contractor's Site Safety Coordinator will regularly attend any Site meetings, including:

- (a) Joint Health and Safety Committee meetings required under the *Workers Compensation Act* (British Columbia); and
- (b) Site safety coordination meetings.

## **7 AUDITS AND INSPECTIONS**

### **7.1 Access to Work Area, Personnel and Records**

The Contractor will allow BC Hydro and its agents' unrestricted access to carry out safety inspections and audits of Site Work, worksite conditions and all pertinent health and safety performance records to determine adherence to safety and health objectives ("**Safety Audits and Inspections**"). BC Hydro and its agents' personnel may carry out Safety Audits and Inspections without prior warning or notice to the Contractor. The Contractor will, during Safety Audits and Inspections, provide evidence of, or establish demonstrated compliance with, Safety Laws, the Site Safety Management Plans (SSMP) and Good Industry Practice.

### **7.2 Workplace Safety Audits**

The Contractor will conduct workplace safety audits in accordance with Good Industry Practice at least once each month during the period between the Effective Date and the Total Completion Date.

Workplace safety audits will be conducted by the Contractor's Site Safety Coordinator. Workplace safety audits will measure the effectiveness of the Contractor's occupational health and safety systems and determine the Contractor's compliance with the OHSMP, the applicable SSMP's, Safe Work Procedures and Safety Regulations.

The Contractor will review all workplace safety audit findings with the Prime Contractor's representative responsible for the Work Area being audited and will determine and implement corrective action for all identified nonconformities.

On or before the last day of each month, the Contractor will prepare and submit to the Prime Contractor's representative, for information only, a completed audit report.

The Contractor will promptly remedy all unsafe conditions and procedures and provide a report back to the Prime Contractor's representative confirming that the applicable issue has been remedied.

### **7.3 Response to Safety Deficiencies**

If, in the opinion of BC Hydro, the Contractor's Work or operations pose an undue hazard, BC Hydro may shut down the Work until such time as the conditions are corrected. BC Hydro may verbally order the Contractor's Representative to shut down the work effective immediately, and deliver notice in writing of the order to the Prime Contractor's representative within 48 hours after giving the verbal order. The

Contractor will not be entitled to any compensation or payment from BC Hydro for any costs the Contractor incurs by reason of such shutdown or the implementation of corrective safety measures.

On or before the last day of each month the Contractor will prepare and submit to Hydro's Representative a statistical report, in the form provided by Hydro's Representative, of all safety deficiencies. The Contractor will maintain such reports in accordance with Schedule 15 [Records]. The Contractor will document the implementation of all corrective actions and will, on a monthly basis, provide proof of the implementation of all corrective actions to BC Hydro.

#### 7.4 Annual Audit

The Contractor will cause an independent third party, acceptable to BC Hydro, to conduct an audit of the Contractor's OHSMP to the BC Construction Safety Association's standard, not less than once each calendar year during the duration of the Contract, in order to assess the Contractor's compliance with, and implementation of, the OHSMP, as required by the Safety Laws and this Schedule 10 [Safety].

The Contractor will submit the independent auditor's report to BC Hydro within one week of the anniversary of the completion of the previous annual audit in accordance with the Review Procedure, and in any event within 14 days after receipt.

### **8 ACCIDENTS AND INCIDENTS**

#### 8.1 Accident and Incident Reporting

The Contractor will:

- (a) immediately notify WorkSafeBC, the Prime Contractor and BC Hydro of any incident if the incident involves serious injury or death, public safety, a public near-miss incident, a major structural failure or collapse, a major release of Hazardous Material, or any other circumstance which is required to be reported pursuant to Safety Laws. For the purposes of this Section 8.1(a), the Contractor will use the incident report form set out in Appendix 10-3 [Contractor Safety Incident Report Form], or such other form as Hydro's Representative may from time to time require;
- (b) where an incident investigation report is required pursuant to the *Workers Compensation Act* (British Columbia), prepare and submit a report to WorkSafeBC, and concurrently deliver a copy of such report to the Prime Contractor and BC Hydro; and
- (c) follow and adhere to BC Hydro's Incident Management System requirements.

### **9 PUBLIC SAFETY**

#### 9.1 Public Safety Management Plan

The Contractor will collaborate with the Prime Contractor to develop a Public Safety Management Plan in accordance with Section 5.3 of the CSMP and submit the Public Safety Management Plan to the Prime Contractor's representative for review as to completeness. The Contractor will implement and comply with the Public Safety Management Plan, and require all Subcontractors to comply with the Public Safety Management Plan, prepared in accordance with the requirements of this Schedule 10 [Safety].

**10     WORKER HEALTH AND SAFETY MANAGEMENT PLAN**10.1   Worker Health and Safety Management Plan

The Contractor will develop a Worker Health and Safety Management Plan in accordance with Section 5.5 of the CSMP. For the purposes of this Contract, the Worker Health and Safety Management Plan will be considered to be the Site Safety Management Plan.



# SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS

## APPENDIX 10-1

### SAFETY MINIMUM REQUIREMENTS

#### OPERATIONAL FIELD SUPPORT PLANNING AND REVIEW

Project Short Name:	Site C Clean Energy Project		
Project Description:	Installation of turbines and generators		
Project Phase:			
Occupational Health & Safety Specialist:	Natalee Williams	Date Created:	Nov 11 2014

## Project Information

### Level of Risk for this Project

 **High**
 **Moderate**
 **Low**

BCH Safety Region:	Peace River Region Northeastern BC	Business Group:		Facility of Asset:	
Construction Start Date:		Site Location/ Identification Description(s):	Located on the Peace River approximately 15 kms east of Fort St John BC and downstream of the GMS and Peace Canyon Generating Stations.		
Construction End Date:					
Project Description for Safety Management Purposes:					
This project requires the preparation for and installation of the turbines and generators for the six 183 MW generating units within the project scope of the Site C Clean Energy Project (Site C), a third dam and hydroelectric generating station under development on the Peace River in northeast B.C.					

## Background and Instructions for Use

### About Contractor OH&S Programs

All contracting organizations are required to have an OH&S program as defined in the Occupational Health and Safety Regulation of British Columbia (OHSR) including all seven essential elements outlined in OHSR Section 3.3. The OH&S program is typically reviewed as part of the BC Hydro procurement process and may be reviewed by the

Prime Contractor for completeness.

### What is a BC Hydro “Safety Minimum Requirements” (SMR) document?

A “Safety Minimum Requirements” or “SMR” document (this document) is part of BC Hydro’s Project Safety Planning System. The SMR is intended to consistently and clearly outline the base expectations of the owner for any project work. Most importantly, this is the guide for contractors to be empowered to efficiently build an effective site safety management plan (SSMP)

### About Contractor Safety Management Plans (SSMP) –

All contracting organizations are required to have a site-specific safety management plan (SSMP) that covers all personnel at site. There is no such thing as a generic safety plan – each safety management plan must address the work, hazards and specific conditions of the work site.

The required depth and scope of the SSMP is guided by:

- The risk and complexity of the project including contemplated work, work methods and work environment
- Applicable safety regulations as well as BC Hydro requirements.

The Prime Contractor will review your SSMP prior to commencing work to ensure that it provides reasonable evidence to the Prime Contractor that the SSMP is complete. BC Hydro expects that the SSMP will be adhered to and be a living document that is updated as needed when changes to contemplated work, work methods or work environments occur.

### Disclaimer

**The information presented in this document is intended to provide information on safety management requirements only for the specific project described. This is not a definitive guide to government legislation or BC Hydro policies. This information does not relieve persons, organizations or other entities from their responsibilities under applicable legislation or BC Hydro policies. BC Hydro does not guarantee the accuracy of, and does not assume liability for, the information presented. Errors and omissions may occur. All information is subject to change without notification. Paper copies of this document are not controlled – users of this document are responsible to ensure that they are relying upon the correct information and to inquire about any updates that may be released.**

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## Foundational Requirements for Safety Management

Foundational Requirement 1

### OH&S Program Required for all Contractors


All contracting organizations must have an OH&S program that has been reviewed by BC Hydro or the Prime Contractor prior to work commencing. The OH&S program must be available at the work site and a copy must be on file with BC Hydro. Out-of-province contractors must ensure that they are able to provide evidence that they are able to meet regulatory requirements for the Province of British Columbia. In some cases, “less formal” OH&S programs may be acceptable; it is the contractor’s responsibility to verify this.

At a minimum, the OH&S program must provide for the following (see OHSR Section 3.3 (BC) or WorkSafeBC):

<ol style="list-style-type: none"> <li>1. An OHS policy for your organization.</li> <li>2. Regular inspection of premises, machinery, tools, equipment, and work practices.</li> <li>3. Written instructions (safe work procedures) to guide workers in the safe performance of their jobs.</li> <li>4. Regularly scheduled management meetings.</li> <li>5. Investigation of incidents, injuries, and diseases.</li> <li>6. The keeping of safety Records and statistics.</li> <li>7. Instruction and supervision of workers.</li> </ol>
<b>“No OH&amp;S Program, No Work”</b>

Foundational Requirement 2	<b>Site-Specific Safety Management Plan (SSMP) Required for all Sites</b>
<p>All contracting organizations must have a Site-Specific Safety Management Plan (SSMP) that has been reviewed by BC Hydro or the Prime Contractor prior to work commencing. There is no such thing as a generic SSMP – each SSMP must address the work, hazards and specific conditions of the work site. The SSMP must be available at the work site and have been clearly communicated to all persons at site.</p>	
<b>“No Site-Specific Safety Management Plan, No Work”</b>	

Required Elements of a Site-Specific Safety Management Plan	
Element 1	<b>Safety Communications and Record Requirements</b>
<p>The contractor’s SSMP will include:</p> <ul style="list-style-type: none"> <li>• The <b>name and contact information</b> of the person-in-charge of the project.</li> <li>• The <b>name and contact information</b> of the person-in-charge of the project on site.</li> <li>• The <b>name and contact information</b> of the person responsible for safety on the project.</li> <li>• Copies of <u>all forms</u> utilized for safety communications such as safety orientations, tailboards, meetings and other safety activities.</li> </ul> <p>The contractor SSMP must provide written evidence of a means to maintain all current and historical records at site.</p>	

Element 2	<b>Compliance with BC Hydro Standards</b>
<p>The contractor SSMP will include <u>all</u> relevant BC Hydro Life Saving Rules</p>  <p>Safety Practices Regulations, and Safety Publications that are <u>relevant</u> to the work, hazards and specific conditions of the work site. This information is available for contractors at:</p> <ul style="list-style-type: none"> <li>• <a href="https://extranet.bchydro.com/sites/safety/default.aspx">https://extranet.bchydro.com/sites/safety/default.aspx</a></li> <li>• If you do not have an existing password, please contact <a href="mailto:ExtranetUserRequests@bchydro.com">ExtranetUserRequests@bchydro.com</a></li> <li>• If you do not have access to the extranet site you may use this <a href="#">alternative web page</a></li> </ul>	
Element 3	<b>Hazard Identification and Risk Assessment</b>
<p>The contractor SSMP will include their own list of <u>all</u> hazards, risks and planned mitigations related to the contemplated work, work methods and work environments. Information on the hazards related to this project and known by the owner is included in <b>Appendix A</b>.</p>	
Element 4	<b>Occupational Health and Industrial Hygiene</b>
<p>The contractor SMP will include provisions for developing <b>exposure control plans</b> for <u>all</u> identified Occupational Health and Industrial hygiene hazards such as silica, H2S and lead or asbestos. Exposure control plans must be submitted to BC Hydro and or the Prime Contractor for review 10 days prior to starting work.</p>	
Element 5	<b>First-Aid, Emergency Response and Rescue Response</b>
<p>The contractor SSMP will include <u>relevant response plans</u> for first-aid, emergencies and rescue as are required given the contemplated work, hazards and specific conditions of the work site. A First Aid Assessment form is available at WorkSafeBC website <a href="http://www2.worksafebc.com/PDFs/firstaid/First_aid_assessment_worksheet.pdf">http://www2.worksafebc.com/PDFs/firstaid/First_aid_assessment_worksheet.pdf</a> .</p>	
Element 6	<b>Safe Work Procedures</b>
<p>The contractor SSMP will include <b>safe work procedures</b> for <u>all</u> work related to the power system and for all high-hazard or non-routine work as identified in the contractor hazard identification and risk assessment such as work within WPP boundaries, confined space entry, abrasive blasting, work from heights, lead abatement, work with silica or other work. Safe work procedures must be submitted to BC Hydro and or the Prime Contractor for review 10 days prior to this work starting.</p>	
Element 7	<b>Training and Competence</b>
<p>The contractor SSMP will include a <b>portfolio</b> of training records for all personnel including name, job title/trade and evidence of completed and current training. Copies of training records or certificates must be available for review on site but not included in the SSMP.</p>	
Element 8	<b>Personal Protective Equipment (PPE)</b>
<p>The contractor SSMP will clearly identify the <b>PPE</b> required to perform the work and mitigate hazards and specific conditions of the work site.</p>	

<b>Element 9</b>	<b>Inspections</b>
The contractor SSMP will include the <u>relevant</u> <b>inspection activities</b> given the equipment, contemplated work, hazards and specific conditions of the work site. The activities must be aligned with expectation in the submitted contractor OH&S program.	
<b>Element 10</b>	<b>Near Miss Reporting</b>
The contractor SSMP will include provisions for: <ul style="list-style-type: none"> <li>• Reporting and investigation of all incidents</li> <li>• Reporting all incidents without delay to the Prime Contractor representative.</li> </ul>	
<b>Element 11</b>	<b>Subcontractor Management</b>
The contractor SSMP will include all <u>relevant</u> <b>safety information</b> for the work being performed by subcontractors. Considerations may include safe work procedures for the work performed by subcontractors and training records for subcontractor personnel.	

## Project Specific Safety Requirements

The following specific safety requirements must be followed and included in SSMP if specified below.

<b>Specific Safety Requirement #1</b>	<b>Training</b>
<b>WPP</b>	
Once construction of equipment reaches a point where the BC Hydro Representative considers it necessary, (as outlined in 3.6 above) workers must receive a minimum WPP System Component Category A&B training. To register for training or to inquire about training, please contact the relevant BC Hydro representative.	
<b>Site Orientation</b>	
Contractor SSMP will state that all personnel will attend and participate in the Prime Contractor Safety Orientation before commencing work.	
In addition, the contractor is required to provide all workers with a Contractor New Worker orientation to communicate hazards specific to the scope and location of the work being performed. Orientation records must be maintained and be made readily available.	
<b>Specific Safety Requirement # 2</b>	<b>Work Involving “Boats”, or “Swift Water”</b>
An acceptable contractor SSMP for this project must: <ul style="list-style-type: none"> <li>• Comply with BC Hydro’s OSH Standard 408-Operation of Boats</li> <li>• Contain a <b>Standard or Rule</b> that for any work that may be done in and around rivers, lakes, reservoirs or other bodies of water, under the following conditions: <ul style="list-style-type: none"> <li>▪ working in river environments classified as low to high risk;</li> <li>▪ construction project</li> <li>▪ working from boats or barges</li> </ul> </li> </ul>	

- working in small team unsupervised;
- **Contain assurance that appropriate rescue training is provided to rescuers.**
- **Contain detailed information** on your company's specific safe work procedures that comply with relevant regulatory requirements to ensure safe working conditions where work will be in or around swift currents and/or in water and/or from boats.
- **Contain detailed information** on your company's specific safe work procedures that comply with relevant regulatory requirements to ensure safe working conditions where work methods may include snorkelling and/or other underwater work.

**Specific Safety Requirement # 3**

**Motor Vehicle Safety**

**Worker transport vehicles** owned and operated by the Contractor are responsible for all aspects of safety of the vehicle including condition, maintenance, operation, and use. Requirements apply under provisions such as Part 17 (Worker transportation) of the WorkSafeBC Regulation, and those under the **Motor Vehicle Act**.

**Specific Safety Requirement # 4**

**Public Safety Requirements**

BC Hydro and the Independent Parties performing work on BC Hydro Facilities must identify hazards that influence the public created by their operations. Assessing the risk of these hazards, and where applicable, implementing control measures will eliminate any risk to the public. Documenting, tracking, and maintaining any required control measures and reporting and investigating public safety incidents must be recorded and submitted to the BC Hydro and or Prime Contractor representative.

Workers must report unsafe conditions or practices to the Prime Contractor Site Representative responsible for corrective action.

Definition of a public incident means; any event involving BC Hydro property or personnel where there was an injury (public injury) or the potential for injury (public near miss) to the public.

**SSMP Requirement-** The following will be completed to ensure public safety:

- Hazard Identification
- Public Hazards, Control measures and safety devices procedures
- Regular Inspection and Maintenance
- Signs
- Interaction with Public Procedures

**Specific Safety Requirement # 5**

**Working Alone or in Isolation Requirements**

Prior to Contractor starting their work assignments, a working alone or in Isolation procedure must be submitted to BC Hydro and or the Prime Contractor for review.

Hazard identification must be completed identifying all hazards and the measure to eliminate the hazards and minimize the risk to the workers. The Contractor must minimize the risk from the hazard to the lowest level practicable using engineering controls, administrative controls or a combination of engineering and administrative controls.

Provincial and Federal Safety Authorities will be consulted to verify regulations and guidelines for Working Alone or in Isolation.

Specific Safety Requirement # 6	<b>Wildlife</b>
<p>The requirements of an active and effective wildlife awareness program and to provide information on common animals and insects that may be encountered must be conducted.</p> <p>Caution is necessary when travelling through wildlife habitats. Attacks upon humans in the wilderness are not common, but still present a risk. Insects are usually not dangerous if common sense precautions about exposure are taken.</p> <p>The WorkSafeBC Occupational Health and Safety Regulation requires the development of effective written procedures in addition to education and training for workers who may be exposed to safety risks including bears, or other wildlife, and insects. An assessment of risk must be made for every place of work where some level of risk could reasonably be expected from wildlife.</p> <p>As required by WorkSafeBC regulations, training of all employees who are exposed to the potential of encounters with bears, other wildlife and insects will be conducted. Training must be presented to all participants.</p> <p>BC Hydro policy on weapons and firearms is explained in Corporate Policy – Security</p>	
Specific Safety Requirement # 7	<b>Winter Field Work</b>
<p>Section 7.34(a) of the <i>WSBC Regulation</i> requires that a cold stress assessment be conducted if a worker is or may be exposed to conditions which could cause cold stress or injury, or could cause a worker's core body temperature to fall below 36°C (96.8°F), or fall below the "little danger" levels in the ACGIH table (see OHS Guidelines <a href="#">G7.33-2</a> and <a href="#">G7.33-3</a>). Part of the cold stress assessment for hazardous exposure will include the potential for unplanned exposure.</p> <p><b>Education and Training</b></p> <p>This element will contain initial and ongoing training and education that will be provided to all workers who work in areas where there is a reasonable likelihood of exposure to conditions that could cause cold stress. The training and education material provided to workers who have not previously worked in a cold stress environment will include the following information:</p> <p>Recognition of the signs and symptoms of impending hypothermia or excessive cooling of the body even when shivering does not occur</p> <ul style="list-style-type: none"> <li>• Recognition of impending frostbite</li> <li>• Proper re-warming procedures and appropriate first aid treatment</li> <li>• Proper use of clothing</li> <li>• Proper eating and drinking practices</li> <li>• Safe work practices appropriate to the work that is to be performed</li> </ul> <p>For those workers exposed to cold-stress environments, provide refresher training and education to ensure that workers remain knowledgeable about the above-mentioned items. It is recommended that continuing education be provided at least annually.</p>	
Specific Safety Requirement # 8	<b>Work Involving “Helicopters and Fixed Wing Aircrafts”</b>
<ul style="list-style-type: none"> <li>• Must comply with BC Hydro’s OSH Standard 407-Helicopter and Fixed-wing Aircraft Safety.</li> <li>• BC Hydro contractors, who use helicopters, must choose helicopter vendors that meet or exceed the BC Hydro Helicopter policy and standards. This means that the contractor chosen helicopter vendors must have a signed helicopter safety management system which demonstrates:</li> </ul>	



- Policy on safe use of helicopters,
  - Standard Operating Procedures,
  - Pilot qualification in terms of flying hours, including utility wire environment experience where appropriate for the contract work,
- **SSMP must specify detailed information** on your company's specific safe work procedures that comply with relevant regulatory requirements to ensure safe working conditions where work will involve the use of helicopters or fixed wing aircraft.

<b>Specific Safety Requirement # 9</b>	<b>Hot Work</b>
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The contractor SSMP must include the provision for participation in a Hot Work Permit program. Hot work permits will be administered to all contractors for implementation and will include:

- i. Authorization from the Prime Contractor before hot work commences
- ii. Dedicated and trained Fire Watch
- iii. Precautions for the prevention of fire
- iv. Mandatory checks after hot work has ceased

<b>Specific Safety Requirement # 10</b>	<b>Mobile Equipment / Cranes / Drill Rigs</b>
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**The contractor SSMP must include the following provisions**

**Equipment inspection daily prior to use and all findings documented in the equipment log books.** Operators manuals must be in equipment or readily available at site. All workers will be wearing high vis clothing when working in proximity to mobile equipment. Fire extinguishers with up to date inspection tags must be on board. Rentals must have recent inspections and if applicable, up-to-date yearly NDT and dielectric testing.

Crane Operators must be certified by British Columbia Association for Crane Safety (BCACS) or Fulford Harbour Group (FHG) or the Industry Training Association (ITA). Crane operator's certification must be available on site at all times.

<b>Specific Safety Requirement # 11</b>	<b>PPE</b>
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The contractor SSMP must include provision for Mandatory PPE for this work site. Minimum standards must include head protection, foot protection, high visibility clothing, and eye protection.

<b>Specific Safety Requirement # 12</b>	<b>Site Safety Coordination</b>
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Ensure the following accountabilities are carried out by the Site Safety Coordinator for the safety area1. Establish a means of informing workers who the Site Safety Coordinator is and how to contact that individual.

2. Review the scope of work of all employers on site that might adjoin or overlap. These areas must be discussed with all employers on a multiple-employer workplace so that the hazards can be explained to affected workers.
3. Review all employers' site-specific work procedures before they begin work. 4. Conduct and document timely site safety co-ordination meetings to co-ordinate safe work activities.
5. Conduct regular site inspections, along with the employer safety representative, to identify work areas



where more than one employer is working.

6. Accompany the WorkSafeBC officer, along with the appropriate employer safety representative, on-site inspections. The results of the inspection must be posted in accordance with WorkSafeBC requirements.

7. Inform all employer safety representatives of the hazards and risks that arise at the work-site as work is in progress.

8. Transfer accountabilities and records to a successor if required.

**Specific Safety Requirement # 13**

**Hazardous Materials / WHMIS**

If WHMIS controlled products are used in the workplace Prime Contractors, and Subcontractors must establish and maintain an effective WHMIS program, as part of the overall workplace health and safety program, the program will address the following:

Applicable WHMIS Requirements including education and training is reviewed at least annually or more frequently if required by a change in work conditions or available hazard information. General WHMIS education, as it pertains to the workplace, must be provided to all workers. If there is a possibility of excessive exposure of lungs or skin to the use of strong solvents contractor must prepare a chemical exposure control plan that involves safe work procedures to control and prevent workers being exposed to this specific solvents and that will include adequate mechanical ventilation by the use of exhaust or other means of mechanical ventilation as prescribed in their respective site specific ECP.

**MSDS must be available for all WHMIS controlled products brought onto the worksite.**

**Specific Safety Requirement # 14**

**Concrete Cutting, Coring & Drilling**

Contractors will ensure that appropriate practices and Site Specific Safety Work Procedures including silica exposure control procedures are developed prior to work commencing.

## ATTACHMENT 1 – Owner Identified Hazards

This hazard identification process was completed considering BC Hydro's existing knowledge of the work site. The contractor process must include verification of hazards identified by BC Hydro as well as any additional hazards based on their work methods or any other changes plus any control measures/safeguards/barriers planned or implemented to address them.

#	Hazard Type	Hazard Description
1.	<b>Travel to work-site</b>	<ul style="list-style-type: none"> <li>Public roadway from town of Fort St John with commercial and passenger vehicle traffic</li> <li>Pedestrian traffic</li> <li>School zones on route</li> </ul>
2.	<b>Mobile equipment</b>	<ul style="list-style-type: none"> <li>Adjacent work by others may create mobile equipment hazards</li> <li>Road maintenance work involves mobile equipment on right of ways and access routes</li> <li>Steep slope areas</li> </ul>
3.	<b>Power lines</b>	<ul style="list-style-type: none"> <li>Potential for electrical and overhead hazards</li> </ul>
4.	<b>Height hazards</b>	<ul style="list-style-type: none"> <li>Work on steep slopes may require fall protection system</li> <li>Work at heights must be conducted as per the regulatory requirements</li> </ul>
5.	<b>Working over and/or near water</b>	<ul style="list-style-type: none"> <li>Worksite is located downstream of two generating stations on the Peace River</li> <li>Swift water and frigid water temperature conditions exist</li> <li>River water levels fluctuate due to upstream generating stations</li> <li>Ice flows present on the river in the winter and early spring months</li> <li>Spring run-off may contribute debris to be present on the river</li> </ul>
6.	<b>Slips/Trips/Falls</b>	<ul style="list-style-type: none"> <li>Uneven terrain</li> <li>Icy and slippery conditions present during fall and winter months</li> <li>Large diameter boreholes present on site from previous work</li> <li>All boreholes may not be correctly represented on site maps</li> <li>Steep slopes</li> </ul>
7.	<b>Wildfire</b>	<ul style="list-style-type: none"> <li>Fire hazards in the region vary but exist during spring &amp; summer months – local authorities may limit work activities during extreme conditions</li> <li>Precautions must be taken with any work activities or equipment that may create sparks as well as workers smoking on site</li> <li>Contractor must ensure they follow all requirements of the Wildfire Act and Regulations</li> </ul>
8.	<b>Communications issues</b>	<ul style="list-style-type: none"> <li>Potential for radio interference</li> <li>Cell phone range on site is intermittent, sporadic or non-existent dependent on location</li> <li>Inadequate communication of adjacent work may cause potential hazards</li> </ul>
9.	<b>Emergency/Rescue</b>	<ul style="list-style-type: none"> <li>Potential for emergency response to be restricted due to road conditions</li> <li>Prime contractor must ensure effective rescue exists for all work performed at this site</li> <li>Emergency helicopter evacuation for an injured worker may be required</li> </ul>

#	Hazard Type	Hazard Description
10.	<b>Site access and egress</b>	<ul style="list-style-type: none"> <li>• Rain and snow cause extreme slippery conditions on service roads accessing areas on site</li> <li>• Site roads and access routes are narrow and winding restricting visibility for oncoming traffic and other roadway hazards</li> <li>• Steep grades on narrow roadways exist</li> <li>• Wildlife and domestic rangeland animals cause potential for vehicle incident</li> <li>• Passenger and commercial vehicle traffic present</li> </ul>
11.	<b>Wildlife</b>	<ul style="list-style-type: none"> <li>• Bears, cougars, wolves, coyotes, deer, elk and moose are local to the Site</li> <li>• Insects such as wasps, bees, spiders and hornets are known to inhabit the area</li> <li>• Insects present including black flies, mosquitoes and ticks present depending on season</li> </ul>
12.	<b>Lighting</b>	<ul style="list-style-type: none"> <li>• Limited daylight hours during late fall and winter seasons</li> </ul>
13.	<b>Noise</b>	<ul style="list-style-type: none"> <li>• Adjacent work and or equipment may create potential for noise hazards</li> </ul>
14.	<b>Silica</b>	<ul style="list-style-type: none"> <li>• Potential for crystalline silica dust exposure due to composition of sand and rock on site</li> <li>• Silica hazard dependent on contractor or adjacent work processes involving concrete placement or finishing</li> <li>• Must comply with BC Hydro's OSH Standard 318-Crystalline Silica</li> </ul>
15.	<b>H2S and other hazardous gases</b>	<ul style="list-style-type: none"> <li>• Oil and gas pipelines run through the site and potential for inadvertent release of hazardous gases exist</li> </ul>
16.	<b>Weather</b>	<ul style="list-style-type: none"> <li>• Freezing rain and snow during fall and winter months</li> <li>• Lightning and electrical storms occur in the region</li> <li>• Hot and dry conditions during summer months</li> <li>• Fog may limit visibility</li> <li>• Increased freezing temperatures with wind chill</li> </ul>
17.	<b>Heat and cold stress</b>	<ul style="list-style-type: none"> <li>• Potential for frost bite and or hypothermia during winter season</li> <li>• Hot weather during summer months may contribute to hyperthermia and heat stroke</li> </ul>
18.	<b>Drinking water</b>	<ul style="list-style-type: none"> <li>• Potable water may not be available at all areas of the project dependent on stage of development</li> </ul>
19.	<b>General hygiene</b>	<ul style="list-style-type: none"> <li>• Wash car facilities must be provided as per regulatory requirements</li> </ul>
20.	<b>Public vehicle traffic</b>	<ul style="list-style-type: none"> <li>• Potential for public using boats on the river</li> <li>• Potential for recreational vehicles to be on site roads and right of ways</li> </ul>
21.	<b>Public interaction</b>	<ul style="list-style-type: none"> <li>• Potential for aggressive behavior from public due to nature of project</li> <li>• Potential for hunters, hikers and other recreational land users to be in area</li> </ul>
22.	<b>Avalanche hazards</b>	<ul style="list-style-type: none"> <li>• Snow and ice build-up on the steep slopes at the work site may provide potential for avalanche hazards</li> </ul>
23.	<b>Mud and rock slide hazards</b>	<ul style="list-style-type: none"> <li>• Mud and rock slides from the steep slopes along the road have potential to occur due to weather conditions and slope stability</li> </ul>
24.	<b>Danger trees</b>	<ul style="list-style-type: none"> <li>• Woodland conditions may cause potential for danger trees to exist at or near access routes</li> </ul>

#	Hazard Type	Hazard Description
25.	<b>Biological hazards</b>	<ul style="list-style-type: none"> <li>• Giant Hogweed has been identified in the region and contains toxic sap that can cause severe burns</li> <li>• Poison ivy, thistle and other vegetation can cause skin irritation</li> </ul>
26.	<b>Violence/Harassment in the workplace</b>	<ul style="list-style-type: none"> <li>• Large multi-employer work site allows for potential for violence or harassment in the workplace</li> <li>• Public may also pose threat due to the nature of the project</li> </ul>
27.	<b>Work alone or in isolation</b>	<ul style="list-style-type: none"> <li>• Large and geographically diverse project site</li> <li>• Potential for inadequate communication due to radio interference or failure</li> </ul>
28.	<b>Congestion</b>	<ul style="list-style-type: none"> <li>• Large multi-employer work site may lead to overlap in work areas</li> <li>• Adjacent work by others may affect Contractor workers</li> </ul>
29.	<b>Engulfment</b>	<ul style="list-style-type: none"> <li>• Existing Dams are upstream of project, potential for engulfment if the WAC Bennett, and/or Peace Canyon dams fail or overflow</li> </ul>
30.	<b>Typical construction hazards</b>	<ul style="list-style-type: none"> <li>• Mobile equipment, cranes, civil construction, temporary electrical systems, formwork, scaffolding, manual handling and labour, excavations, confined spaces, work at heights, silica exposure, welding, noise are examples</li> </ul>
31.	<b>Railway lines</b>	<ul style="list-style-type: none"> <li>• Railway lines run through the worksite and there is a Siding (Septimus Siding) located within the site boundaries</li> </ul>

## **SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS**

### **APPENDIX 10-2**

#### **SAFETY AREA DRAWINGS**

The following Safety Area maps are attached to this Appendix 10-2 [Safety Area Drawings]:

- (a) 1016-C14-A7735-1 R6 [Safety Areas Q1/Q2 2016 to Q4 - 2017];
- (b) 1016-C14-A7750-1 R5 [Safety Areas Q4 - 2017 to Q4 - 2018];
- (c) 1016-C14-A7750-2 R5 [Safety Areas Q4 - 2018 to Q3 - 2022]; and
- (d) 1016-C14-A7750-3 R5 [Safety Areas Q3 - 2022 to Q4 - 2023].

**SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS**

**APPENDIX 10-3**

**CONTRACTOR SAFETY INCIDENT FORM**

(see attached)

**SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS CONTRACT**

**APPENDIX 10-4**

**BANNED OR REGULATED PRODUCTS**

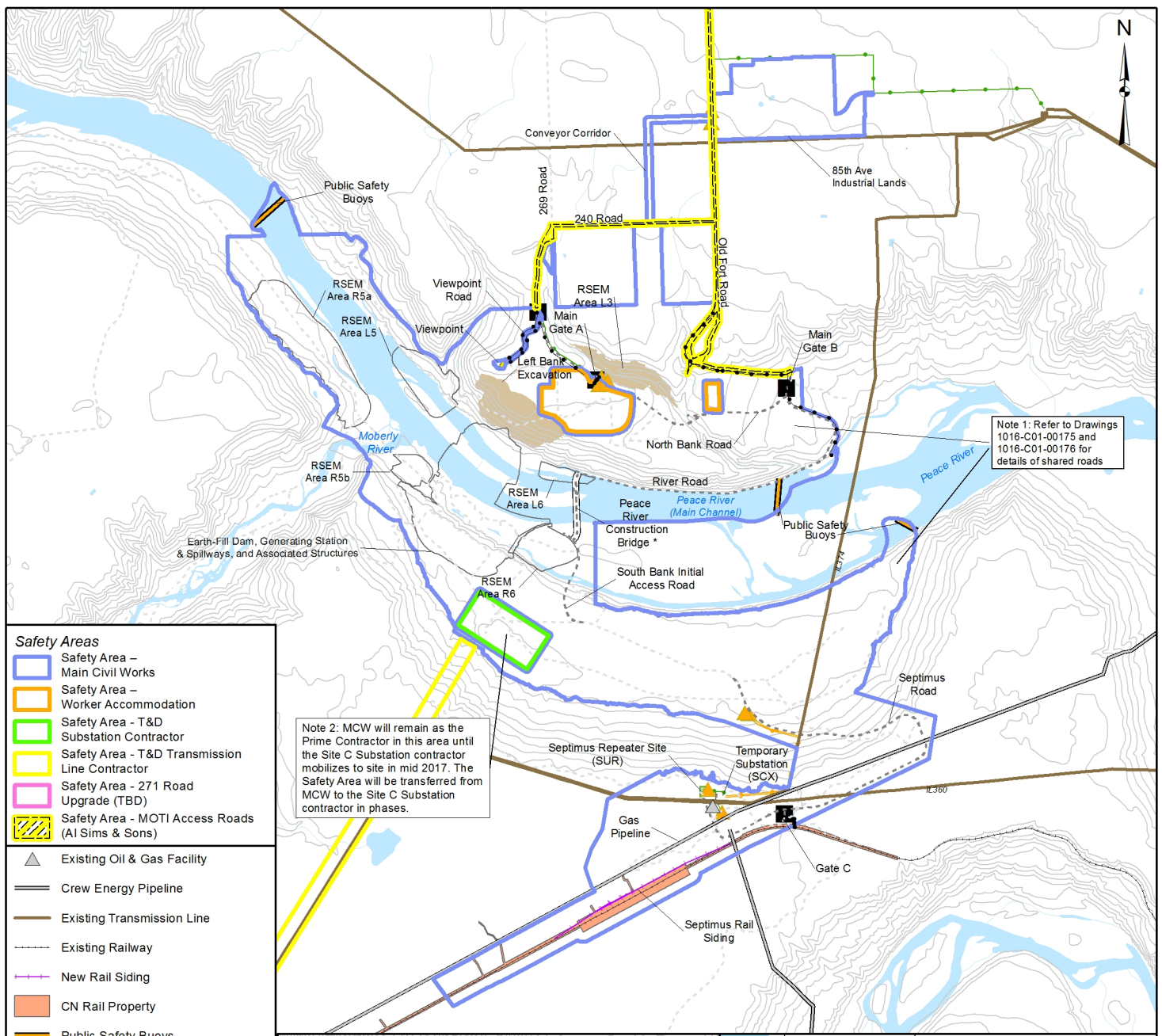
<b>Product Category</b>	<b>Chemical of Concern</b>	<b>Status</b>
Chlorinated Solvent	<ul style="list-style-type: none"> <li>• Chloroethene</li> <li>• Dichloromethane (Methylene Chloride)</li> <li>• Tetrachloroethane</li> <li>• Tetrachloroethylene (Perchloroethylene or Perc)</li> <li>• Tetrachloromethane (Carbon Tetrachloride)</li> <li>• Trichloroethane (1,1,1-Trichloroethane or 1,1,2-Trichloroethane)</li> <li>• Trichloroethylene (Triclene, Trilene, Triklone, Trichlor, TCE, Trilex)</li> <li>• Trichloromethane (Chloroform)</li> </ul>	Banned
CFC	<ul style="list-style-type: none"> <li>• Trichlorofluoromethane (CFC 11, R 11, Freon 11)</li> <li>• Dichlorodifluoromethane (CFC 12, R 12, Freon 12, CEFOIN12, Dymel 12)</li> <li>• Trichlorotrifluoroethane (CFC 113, R 113, Genetron 113)</li> <li>• Dichlorotetrafluoroethane (CFC 114)</li> <li>• Chloropentafluoroethane (CFC 115)</li> </ul>	Banned
HCFC	<ul style="list-style-type: none"> <li>• Chlorodifluoromethane (R 22, HCFC 22, Genetron 22)</li> <li>• 1,1-Dichloro-1-fluoroethane (HCFC 141b)</li> <li>• 1-Chloro-1,1-difluoroethane (HCFC 142b)</li> <li>• 1,1 –Dichloro-2,2,3,3-pentafluoropropane (HCFC 225ca)</li> <li>• Dichloropentafluoropropane (HCFC 225cb)</li> </ul>	Banned
HCFC 123	<ul style="list-style-type: none"> <li>• 2,2-Dichloro-1,1,1-trifluoroethane (R 123, HCFC 123, Genetron 123)</li> </ul>	Banned
Halon	<ul style="list-style-type: none"> <li>• Bromochlorodifluoromethane (Halon 1211)</li> <li>• Bromotrifluoromethane (Halon 1301)</li> <li>• Dibromotetrafluoroethane (Halon 2402)</li> </ul>	Banned
Wood Preservatives	<ul style="list-style-type: none"> <li>• Creosote</li> <li>• Pentachlorophenol</li> </ul>	Banned

Supply and Installation of Turbines and Generators – Appendix 10-4 [Banned or Regulated Products]

Permissible Wood Preservatives	<ul style="list-style-type: none"> <li>• Copper Naphthenate</li> <li>• Copper Chromated Arsenate (CCA)</li> <li>• Disodium Octaborate Tetrahydrate or Borates</li> <li>• Copper 8 Quinolinolate</li> <li>• Ammonical Copper Zinc Arsenate (ACZA)</li> <li>• Ammonical Copper Quat (ACQ)</li> <li>• Copper Azole</li> <li>• Copper Citrate</li> </ul>	Banned, without the prior written approval of Hydro's Representative
Pesticides / Herbicides	<ul style="list-style-type: none"> <li>• All pesticides and herbicides</li> </ul>	Banned, without the prior written approval of Hydro's Representative

If, as a condition of any written approval permitting the Contractor to use any permissible wood preservatives, pesticides or herbicides identified in the above table, Hydro's Representative identifies any relevant BC Hydro policies, procedures and guidelines the Contractor is required to comply with for the use of such products, then the Contractor will comply with such policies, procedures and guidelines.



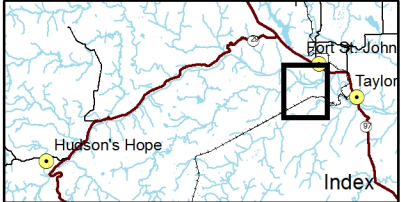
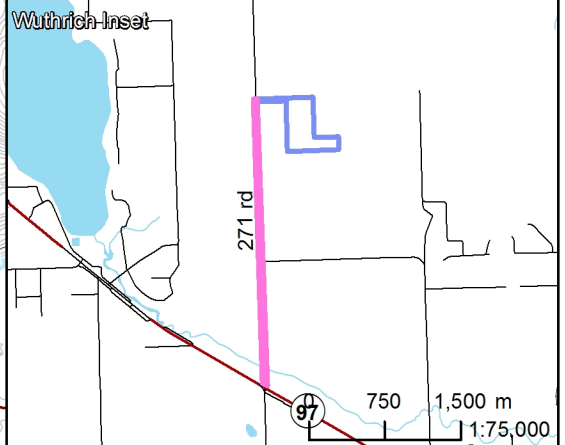
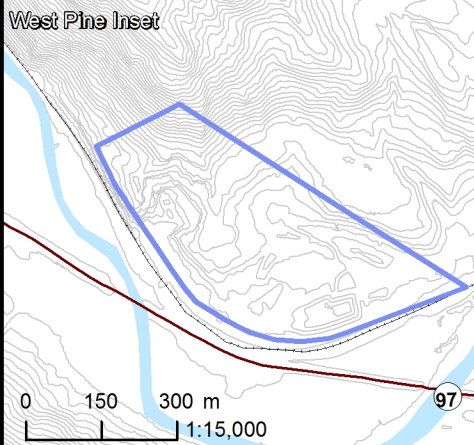


Note 1: Refer to Drawings 1016-C01-00175 and 1016-C01-00176 for details of shared roads

Note 2: MCW will remain as the Prime Contractor in this area until the Site C Substation contractor mobilizes to site in mid 2017. The Safety Area will be transferred from MCW to the Site C Substation contractor in phases.

- Safety Areas**
- Safety Area – Main Civil Works
  - Safety Area – Worker Accommodation
  - Safety Area – T&D Substation Contractor
  - Safety Area – T&D Transmission Line Contractor
  - Safety Area – 271 Road Upgrade (TBD)
  - Safety Area – MOTI Access Roads (All Sims & Sons)

- Existing Oil & Gas Facility
- Crew Energy Pipeline
- Existing Transmission Line
- Existing Railway
- New Rail Siding
- CN Rail Property
- Public Safety Buoys
- Dam Site Roads (Year 1 Construction)
- Existing Roads and Forestry Clearing Access
- Temporary Construction Bridge
- Security Gate
- Security Fencing
- Power Drop
- 3-ph Distribution Line with Fibre
- 3-ph Distribution Line withOUT Fibre
- Dam, Generating Station, and Associated Structures
- Septimus Repeater Site
- L3, Left Bank Excavation



**Map Notes:**

1. Datum: NAD83
2. Projection: UTM Zone 10N
3. Base Data: Province of B.C.
4. BC Hydro does not own or have rights to all the lands within the depicted areas, as of the date of this map.
5. The information on this map is based on the current project schedule and is subject to change.
6. Existing infrastructure is only shown where there is an overlap or interaction with work areas.

1:60,000 0 2.5 km

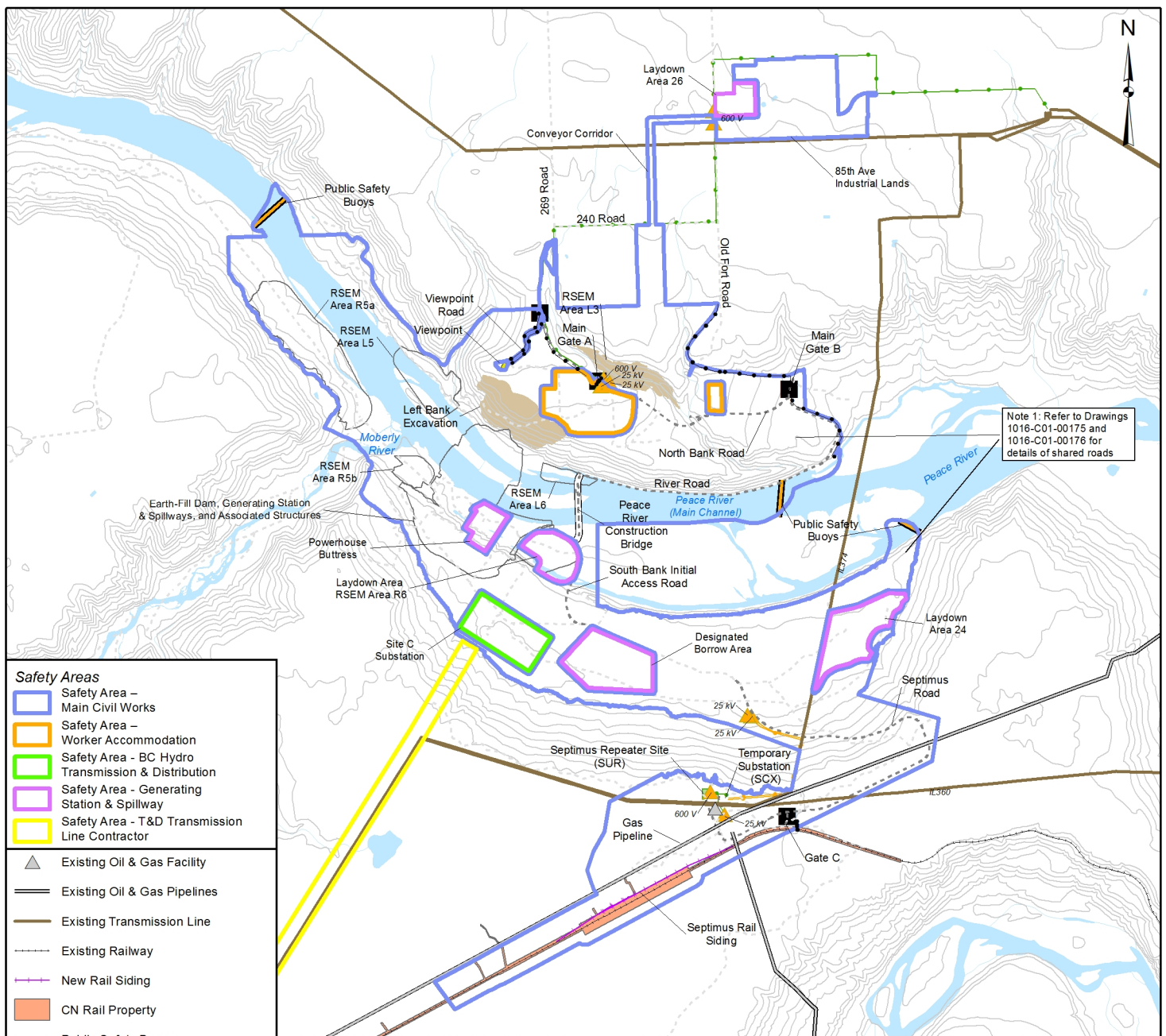
**BC Hydro**

**Safety Areas**  
**Q1/Q2 2016 to Q4 - 2017**  
**Dam Site Area and Off-Site**  
**Construction Material Sources**

DATE	February 9, 2016	1016-C14-A7735-1
		R 6

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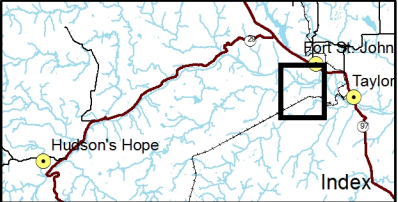
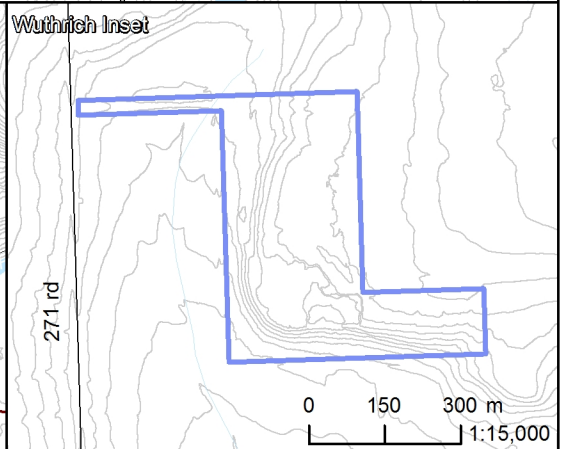
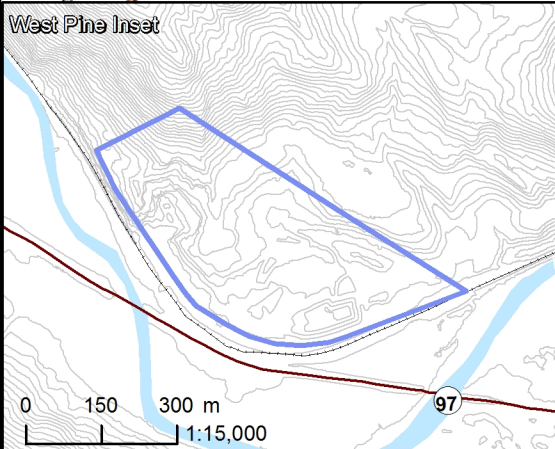




**Safety Areas**

- Safety Area – Main Civil Works
- Safety Area – Worker Accommodation
- Safety Area - BC Hydro Transmission & Distribution
- Safety Area - Generating Station & Spillway
- Safety Area - T&D Transmission Line Contractor

Existing Oil & Gas Facility  
 Existing Oil & Gas Pipelines  
 Existing Transmission Line  
 Existing Railway  
 New Rail Siding  
 CN Rail Property  
 Public Safety Buoys  
 Dam Site Roads (Year 1 Construction)  
 Existing Roads and Forestry Clearing Access  
 Temporary Construction Bridge  
 Security Gate  
 Security Fencing  
 Power Drop  
 3-ph Distribution Line with Fibre  
 3-ph Distribution Line withOUT Fibre  
 Dam, Generating Station, and Associated Structures  
 Septimus Repeater Site  
 L3, Left Bank Excavation



**Map Notes:**

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1:60,000 0 2.5 km

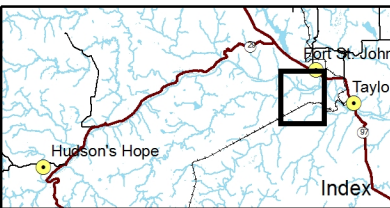
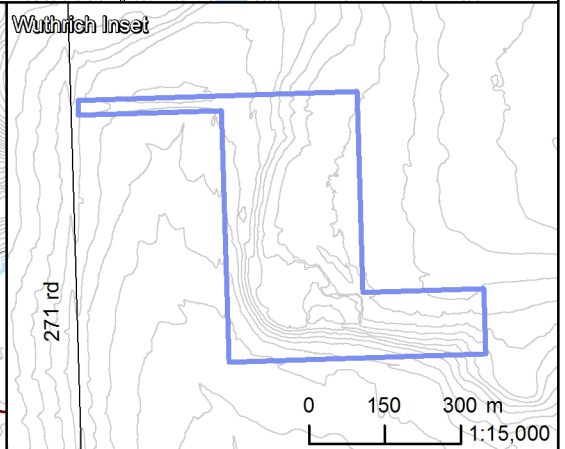
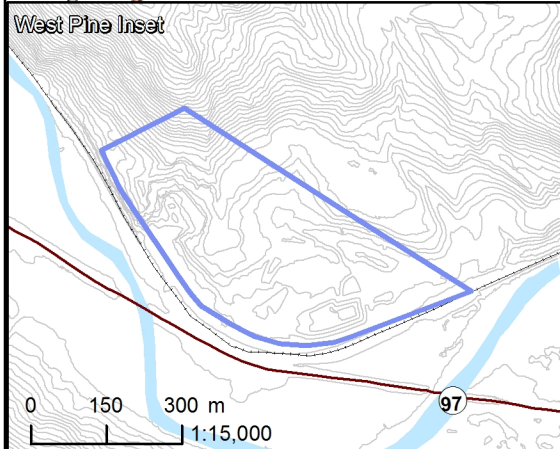
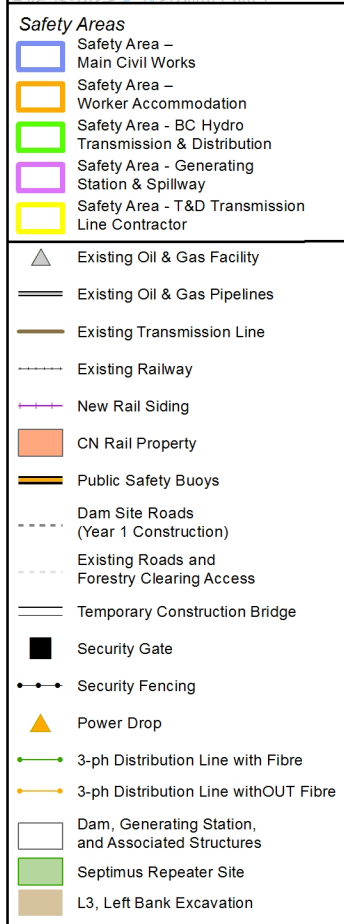
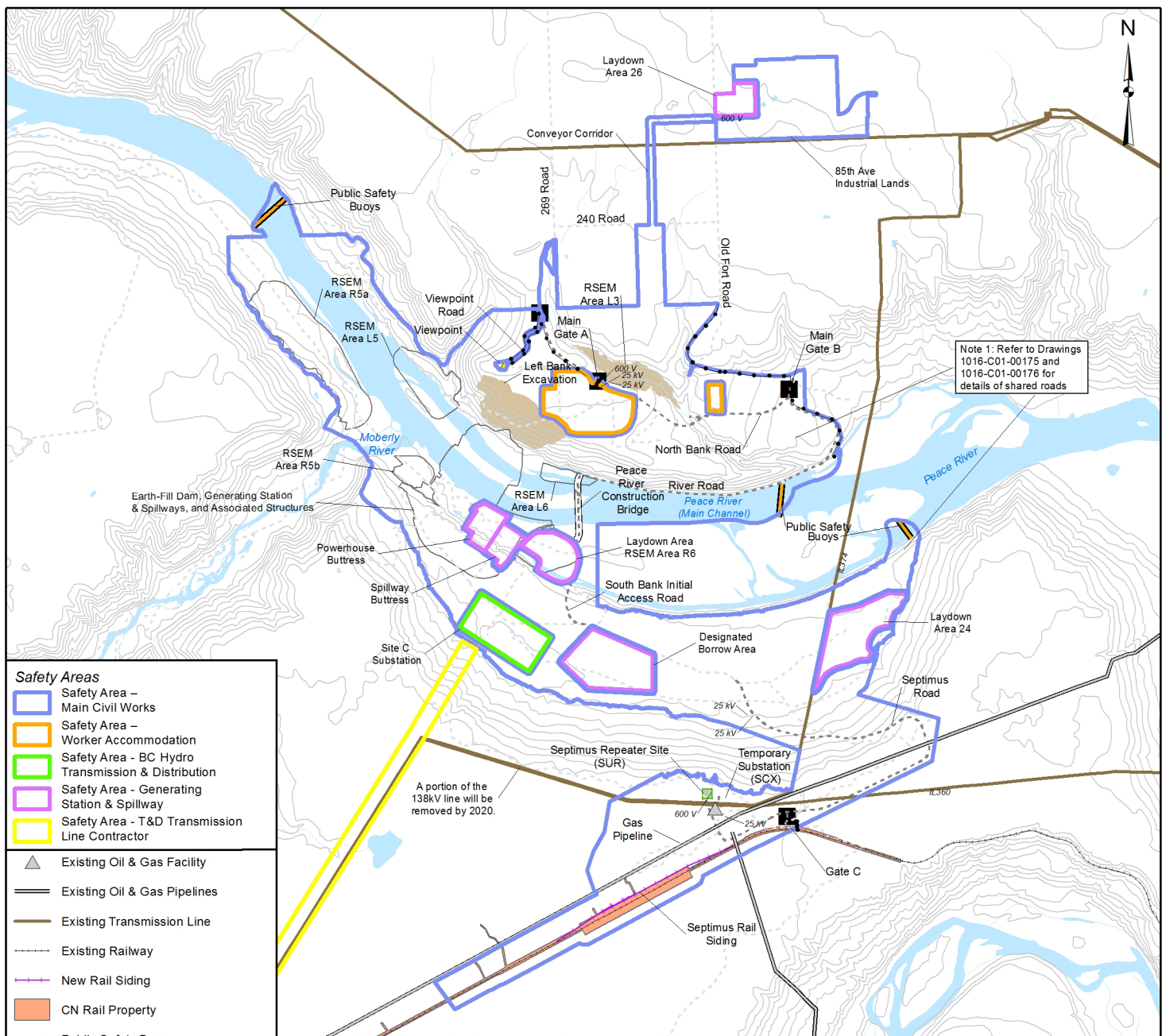
**BC Hydro**

**Safety Areas**  
**Q4 - 2017 to Q4 - 2018**  
**Dam Site Area and Off-Site**  
**Construction Material Sources**

DATE	February 9, 2016	1016-C14-A7750-1	R 5
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Map Notes:

1. Datum: NAD83
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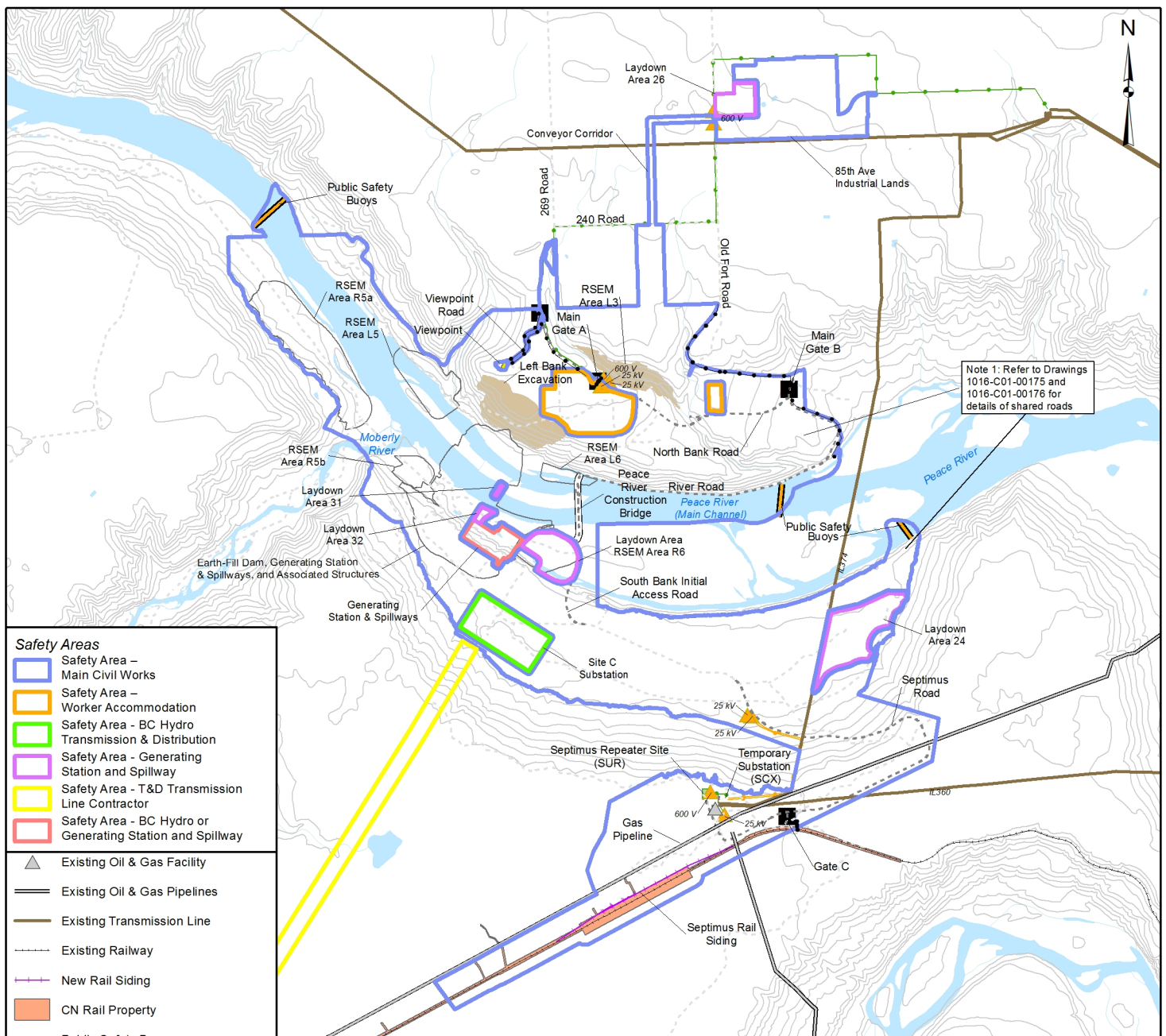
**BC Hydro**

**Safety Areas**  
**Q4 - 2018 to Q3 - 2022**  
**Dam Site Area and Off-Site**  
**Construction Material Sources**

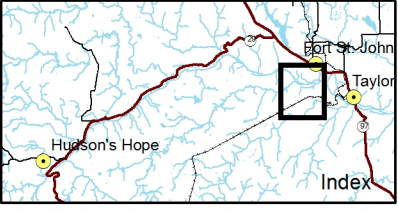
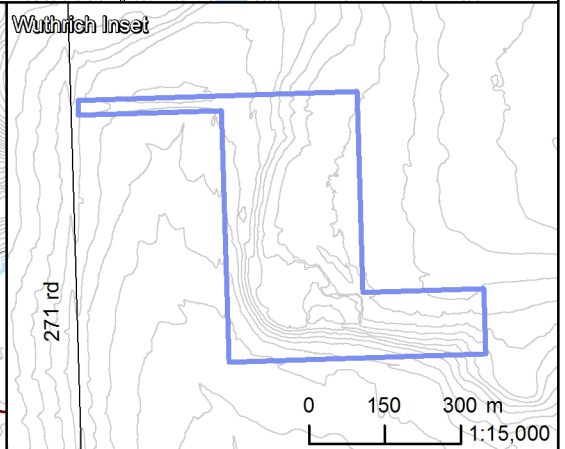
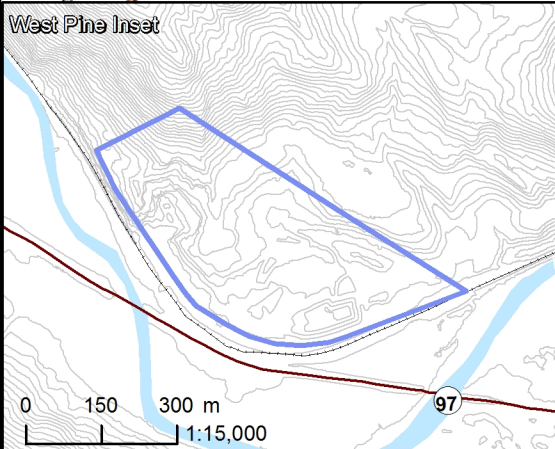
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- Safety Areas**
- Safety Area – Main Civil Works
  - Safety Area – Worker Accommodation
  - Safety Area - BC Hydro Transmission & Distribution
  - Safety Area - Generating Station and Spillway
  - Safety Area - T&D Transmission Line Contractor
  - Safety Area - BC Hydro or Generating Station and Spillway
- Existing Oil & Gas Facility
  - Existing Oil & Gas Pipelines
  - Existing Transmission Line
  - Existing Railway
  - New Rail Siding
  - CN Rail Property
  - Public Safety Buoys
  - Dam Site Roads (Year 1 Construction)
  - Existing Roads and Forestry Clearing Access
  - Temporary Construction Bridge
  - Security Gate
  - Security Fencing
  - Power Drop
  - 3-ph Distribution Line with Fibre
  - 3-ph Distribution Line withOUT Fibre
  - Dam, Generating Station, and Associated Structures
  - Septimus Repeater Site
  - L3, Left Bank Excavation



- Map Notes:**
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1:60,000 0 2.5 km

**BC Hydro**

**Safety Areas  
Q3 - 2022 to Q4 - 2023  
Dam Site Area and Off-Site  
Construction Material Sources**

DATE	February 9, 2016	1016-C14-A7750-3
		R 5

# CONTRACTOR SAFETY INCIDENT REPORT FORM

1. **Contractor:** In the event of any injury (or near-miss incident) to a worker during the contracted work on the BC Hydro job site, as soon as practicable, notify Hydro's Representative of the incident, and submit an incident report.
  1. Complete this incident report form or your own safety incident report as long as it contains the same information.
  2. Forward the completed incident report to Hydro's Representative in electronic or paper copy.
2. **Hydro's Representative:** Use this incident report form completed by the Contractor's Representative to assist you with initiating and completing a BC Hydro Contractor Injury/Illness or near miss Incident report in BC Hydro SAP Incident Management System (IMS).

*Note: Independent Contractors are responsible for incident reporting and investigations and as outlined by WorkSafeBC as per the Worker's Compensation Act Part 3 Division 10.*

Incident Date:	Incident Time: <a href="#">Click here to enter text.</a> AM <input type="checkbox"/> PM <input type="checkbox"/>
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## Incident Information

Incident Location (Address/City): <a href="#">Click here to enter text.</a>	
Brief Incident Description: <a href="#">Click here to enter text.</a>	
Immediate Corrective Actions Taken (if needed): <a href="#">Click here to enter text.</a>	
Description of Injuries and Immediate Treatment Received (including Left or Right side of body): <a href="#">Click here to enter text.</a>	
Treatment Administered By? (e.g. First Aid Attendant/Doctor/etc.) <a href="#">Click here to enter text.</a>	
Did Worker Have Lost Time Beyond Day of Injury?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Was There an Electrical Contact? If YES, please check all that apply	Yes <input type="checkbox"/> No <input type="checkbox"/> WITH: Person <input type="checkbox"/> Vehicle <input type="checkbox"/>

## Contractor Information

Contractor Company Name:	<a href="#">Click here to enter text.</a>	
Name of Contractor's Representative:	<a href="#">Click here to enter text.</a>	
Address:	<a href="#">Click here to enter text.</a>	
Telephone#:	<a href="#">Click here to enter text.</a>	
Hydro's Representative Contract #:	<a href="#">Click here to enter text.</a>	BC Hydro Project #: <a href="#">Click here to enter text.</a>
Are You Prime On Site?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Hydro's Representative Name	<a href="#">Click here to enter text.</a>	
E-Mail Address:	<a href="#">Click here to enter text.</a>	
Telephone#:	<a href="#">Click here to enter text.</a>	