

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

**SCHEDULE 7**

**ENVIRONMENTAL OBLIGATIONS**

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# SUPPLY AND INSTALLATION OF TURBINES AND GENERATORS CONTRACT

## SCHEDULE 7

### ENVIRONMENTAL OBLIGATIONS

#### 1 INTERPRETATION

##### 1.1 Definitions

In this Schedule 7 [Environmental Obligations], in addition to the definitions set out in Schedule 1 [Definitions and Interpretation]:

“**CEMP**” means the Site C Clean Energy Project Construction Environmental Management Plan dated February 4, 2016, as it may be amended from time to time, a copy of which is available from BC Hydro on request;

“**Environmental Aspect Register**” has the meaning set out in Section 3.1 of this Schedule 7 [Environmental Obligations];

“**Environmental Incident**” means an event, act or omission that is, or has the potential to cause, a violation of any of the Environmental Requirements (such as, for illustration, a spill of oil, fuel or hazardous chemicals, or an unauthorized alteration, disruption, or destruction of aquatic or terrestrial habitat);

“**Environmental Monitor**” has the meaning set out in Section 5.1 of this Schedule 7 [Environmental Obligations];

“**Environmental Protection Plan**” or “**EPP**” has the meaning set out in Section 4.4 of this Schedule 7 [Environmental Obligations];

“**Environmental Requirements**” has the meaning set out in the CEMP;

“**Environmental Specifications**” has the meaning set out in the CEMP;

“**Environmental Tailboard Meeting**” has the meaning set out in Section 7.3 of this Schedule 7 [Environmental Obligations];

“**Environmentally Sensitive Area**” has the meaning set out in the CEMP;

“**Independent Environmental Monitor**” means the person retained by BC Hydro under Section 2.2 of the CEMP to monitor the environmental impacts of the Project and report to government;

“**Pre-Work Orientation**” has the meaning set out in Section 7.2 of this Schedule 7 [Environmental Obligations];

“**Qualified Environmental Professional**” means the person(s) appointed by the Contractor under Section 4.1 of this Schedule 7 [Environmental Obligations]; and

“**Stop Work Procedure**” has the meaning set out in Section 4.4(m) of this Schedule 7 [Environmental Obligations].

## **2 GENERAL REQUIREMENTS**

### **2.1 Compliance with Environmental Requirements and EPPs**

The Contractor:

- (a) will be, and will cause the Subcontractors to be, fully knowledgeable of and will, and will cause the Subcontractors to, implement and comply with all the Environmental Requirements and all EPPs as applicable to the performance of the Work at the Site;
- (b) will cause its employees and agents, and the employees and agents of the Subcontractors to be fully knowledgeable of and will cause its employees and agents, and the employees and agents of the Subcontractors, to implement and comply with all EPPs as applicable to the performance of the Work at the Site;
- (c) without limiting Section 6.1 of Schedule 2 [Design and Construction Protocols], will ensure that the construction means, methods, techniques, sequences and procedures for the Work comply with all the Environmental Requirements and all EPPs as applicable to the performance of the Work at the Site; and
- (d) will collaborate with BC Hydro in the identification and design of mitigation measures within the Contractor's Work Area, where appropriate.

### **2.2 Costs borne by the Contractor**

If unauthorized damage to the environment occurs, or threatens to occur, then the Contractor will, except to the extent the damage or threatened damage was or will be caused directly by BC Hydro, or a Person for whom BC Hydro is in law responsible (other than the Contractor and those engaged by or through the Contractor, including Subcontractors), pay all costs incurred to rectify that damage and comply with this Schedule 7 [Environmental Obligations].

## **3 ENVIRONMENTAL ASPECT REGISTER**

### **3.1 Environmental Aspect Register**

The Contractor will, within 90 days of the Effective Date, prepare and submit for Review an environmental aspect register (the "**Environmental Aspect Register**") in a form satisfactory to BC Hydro acting reasonably, setting out all of the environmental requirements applicable to the performance of the Work at the Site. The Environmental Aspect Register will include details such as:

- (a) identification of applicable Environmental Requirement, including applicable provision of the relevant Permit, EAC condition or Federal Decision Statement condition;
- (b) identification of applicable EPP;
- (c) description of the nature and scope of Work covered by the EPP, including a description of the sub-components of the EPP;
- (d) identification of Contractor representative responsible for Work covered by the EPP;
- (e) method of environmental compliance;
- (f) method and frequency of reporting;
- (g) status of compliance with each EPP sub-component during the reporting period; and

- (h) description of any events of non-compliance during the reporting period.

### 3.2 Environmental Aspect Register Updates

The Contractor will, as may be required from time to time, update the Environmental Aspect Register to reflect any additional requirements that may arise to reflect actual conditions encountered at the Site, and to reflect changes to the environmental obligations applicable to the performance of the Work at the Site, including changes in applicable Law (including regulatory requirements), changes in biophysical conditions at the Site or changes to the Contractor's means, methods, techniques, sequences and procedures for the performance of the Work, and submit such updated Environmental Aspect Register for Review.

### 3.3 Monthly Submission of Environmental Aspect Register

The Contractor will submit the then current Environmental Aspect Register to Hydro's Representative For Information Only on a monthly basis. The Contractor will cause each submitted Environmental Aspect Register to be signed by a Qualified Environmental Professional.

## 4 ENVIRONMENTAL PROTECTION PLAN

### 4.1 Qualified Environmental Professional

The Contractor will, with respect to every element of the Work to be performed at the Site, appoint a Qualified Environmental Professional(s) who:

- (a) is knowledgeable about the scope of the Work that will be performed at the Site; and
- (b) has experience and expertise,

to prepare an EPP as required by this Schedule 7 [Environmental Obligations].

### 4.2 Qualifications of Qualified Environmental Professional

Each Qualified Environmental Professional appointed pursuant to Section 4.1 of this Schedule 7 [Environmental Obligations] must be:

- (a) an applied scientist or technologist who specializes in a relevant applied science or technology, including agrology, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology or landscape architecture;
- (b) a member in good standing registered with the appropriate professional association in British Columbia, acting under such association's Code of Ethics and subject to disciplinary action by such association; and
- (c) reasonably relied on to provide advice within his or her area of expertise through demonstrated suitable education, experience, accreditation and knowledge relevant to his or her field.

### 4.3 Review of CEMP

The Contractor will require that each Qualified Environmental Professional appointed will review and be knowledgeable of the CEMP and identify the provisions that may be applicable to the scope of Work to be performed at the Site.

#### 4.4 EPPs

In advance of any element of Work performed at the Site the Contractor will require a Qualified Environmental Professional to prepare a written, detailed environmental protection plan (an “**Environmental Protection Plan**” or “**EPP**”) in respect of such Work that includes:

- (a) a clear statement of objectives;
- (b) a description of potential Project effects and safety hazards, through consideration of baseline conditions and sensitive receptors;
- (c) clear documentation of applicable legislative requirements that must be adhere to, as well as BC Hydro policies, guidelines and other best management practices that will be followed;
- (d) a description of worker qualifications and training requirements pertaining to each of the plans associated with the CEMP;
- (e) a description of the particular Work activities and location to which the EPP applies, including mapping at a suitable scale;
- (f) identification of the specific applicable Environmental Requirements, including applicable Environmental Specifications;
- (g) identification of any Environmentally Sensitive Areas;
- (h) a determination of required relevant mitigation measures;
- (i) a description of environmental monitoring required during the performance of the Work at the Site covered by the EPP, including details regarding the type and frequency of observations and data collection, the methodologies of monitoring, and the protocols that will be followed. The environmental monitoring must be sufficient to reliably confirm that the performance of the Work complies with the EPP;
- (j) a description of environmental reporting required during the performance of the Work at the Site covered by the EPP, including:
  - (i) a reporting process or mechanism to confirm whether the performance of the Work or component of the Work at the Site to which such EPP relates complies with such EPP having regard to the nature of the Work or component of the Work, and to the Environmental Requirements and CEMP;
  - (ii) any required testing or sampling to confirm that Work is proceeding in compliance with the Environmental Requirements;
  - (iii) the type, content and frequency of the environmental reports to be prepared by an Environmental Monitor (using a template and format acceptable to BC Hydro) that the Contractor will submit to BC Hydro and to the Independent Environmental Monitor, which will include:
    - (A) a description of Work performed at the Site covered by the report;
    - (B) a description of environmental monitoring activities covered by the report;
    - (C) results of testing of environmental attributes, if any, as they become available;

- (D) a description of environmental issues and corresponding mitigation measures implemented, if any; and
- (E) a description of photographs (accompanied by identifying information such as date and location) documenting the Work activities, environmental issues, and corresponding mitigation measures implemented; and
- (iv) the content of an annual report (in the format as may be specified by BC Hydro) for each calendar year in which the Work or component of the Work at the Site to which the EPP relates is performed, submitted by the following January 15, including:
  - (A) the quantity of each type of fuel consumed at the Site during the preceding year; and
  - (B) the production throughput for the preceding year of on-Site processes that contribute to greenhouse gas emissions; and
- (v) a requirement that each environmental report that the Contractor is required to submit under the EPP will be signed by a Qualified Environmental Professional;
- (k) a noise management program that describes:
  - (i) any construction activities that create noise that could reasonably be expected to disturb residents in close proximity to the Site; and
  - (ii) the mitigation measures the Contractor will undertake to lessen the impact of the noise created by such construction activities;
- (l) a description of the procedure to be followed in the event of an Environmental Incident, including identification and implementation of mitigation measures and remedial or corrective actions; and
- (m) a description of the procedure to be followed in the event that an order to stop any of the Work is issued, including the identification of the person(s) with the authority to stop and restart the Work (the “**Stop Work Procedure**”).

The Qualified Environmental Professional will sign the EPP(s) confirming that the Qualified Environmental Professional reviewed the CEMP in preparation for writing the EPP and that the EPP complies with the requirements of Section 4.4 of this Schedule 7 [Environmental Obligations] and with the CEMP, as it may be modified as of the date of the EPP.

#### 4.5 Minimum Required EPPs

Without limiting any of the Contractor’s obligations under Section 4.4 of this Schedule 7 [Environmental Obligations], the Contractor will, at a minimum, prepare EPPs in respect of the following scopes of Work:

- (a) materials management;
- (b) waste management;
- (c) water management; and
- (d) on-Site fabrication and assembly facilities.

#### 4.6 Submittal of Environmental Protection Plans

At least 30 days before commencing the performance of any Work or component of Work at the Site, the Contractor will submit the EPP in respect of such Work, prepared in compliance with Section 4.4 of this Schedule 7 [Environmental Obligations], to BC Hydro for Review. The Contractor will not perform any element of Work at the Site for which an EPP has not been prepared and endorsed "Accepted".

#### 4.7 Amendments to Environmental Protection Plans

The Contractor will cause the Qualified Environmental Professional to review and amend as necessary each EPP from time to time so that each EPP at all times complies with the CEMP and the Environmental Requirements. If at any time the Qualified Environmental Professional identifies the need for an amendment to an EPP, including an amendment to measures as described in the EPP or the addition of new measures, then the Contractor will stop or suspend the performance of the Work that is covered by the amendment as may be required to give effect to the pending amendment. Prior to implementing any amendments to an EPP, the Contractor will submit proposed amendments to Hydro's Representative for Review.

### 5 ENVIRONMENTAL MONITORS

#### 5.1 Environmental Monitors

The Contractor will engage one or more qualified monitors (each, an "**Environmental Monitor**") to conduct the environmental monitoring as described and required in each EPP. An Environmental Monitor will be required to:

- (a) perform the monitoring, if any, as specifically required in an EPP, and otherwise generally monitor the performance of the Work at the Site to confirm it is being performed in accordance with the requirements of the applicable EPP; and
- (b) in the event that the Environmental Monitor observes any Work or component of the Work at the Site being conducted in breach of the applicable EPP, immediately notify the Contractor's designated person in accordance with the Stop Work Procedure. When an order to stop any of the Work is issued pursuant to the Stop Work Procedure, the Environmental Monitor will submit a report to BC Hydro and the Independent Environmental Monitor describing the particular Work, location and time of such breach, and the element of the EPP that was breached.

If any Work or component of the Work is stopped pursuant to the Stop Work Procedure, the Contractor will not restart the particular Work until the Environmental Monitor is satisfied that such Work can proceed in compliance with the applicable EPP.

Prior to an Environmental Monitor commencing any environmental monitoring of Work at the Site the Contractor will review with the Environmental Monitor the reporting procedures which the Environmental Monitor will follow in the event of an Environmental Incident as described in Section 6.2 of this Schedule 7 [Environmental Obligations]. The Contractor will engage a Qualified Environmental Professional to manage and supervise the Environmental Monitors that the Contractor has engaged.

## **6 ADDITIONAL ENVIRONMENTAL REPORTING**

### **6.1 Environmental Completion Report**

The Contractor will, at the completion of the performance of the Work or component of the Work at the Site to which an EPP relates, submit to BC Hydro and to the Independent Environmental Monitor a report prepared by an Environmental Monitor using the template and format specified by BC Hydro, which will, at a minimum, include the following:

- (a) a summary of the Work activities on Site;
- (b) a summary of the environmental management activities completed during the performance of the Work;
- (c) a description of any environmental issues encountered during the Work on Site, and the management and mitigation measures used to resolve those issues; and
- (d) representative Site photographs.

### **6.2 Environmental Incidents**

The Contractor will establish reporting procedures to be followed by the Contractor and Subcontractors, and their respective employees in the event of an Environmental Incident, including reporting to the Qualified Environmental Professional and to the Contractor's Representative. The Contractor will submit the reporting procedure to BC Hydro for Review.

In the event of an Environmental Incident, the Contractor will:

- (a) immediately report the Environmental Incident to BC Hydro and to the Independent Environmental Monitor and will, within five Business Days or such longer time as the circumstances may reasonably require, deliver to BC Hydro and to the Independent Environmental Monitor a written Environmental Incident report which includes, to the extent applicable to the Environmental Incident:
  - (i) photo documentation of the Environmental Incident; and
  - (ii) descriptions of:
    - (A) the cause and nature of the Environmental Incident;
    - (B) the approximate magnitude and duration of the Environmental Incident;
    - (C) the area or habitat affected by the Environmental Incident;
    - (D) the environmental resources affected by the Environmental Incident;
    - (E) the results of any sample analyses taken in conjunction with the Environmental Incident;
    - (F) mitigation measures taken to control or limit the activity causing the Environmental Incident;
    - (G) additional proposed remedial or corrective actions recommended to address the Environmental Incident;

- (H) communications held with Project personnel with respect to the Environmental Incident;
  - (I) communications with any third parties with respect to the Environmental Incident; and
  - (J) the collection of samples which were required to characterize the extent and nature of the Environmental Incident; and
- (b) if the Environmental Incident is required under any applicable Laws or Permits to be reported to a Governmental Authority, immediately complete such report in accordance with the requirements of the applicable Laws or Permits.

Without limiting Section 6.2(a) of this Schedule 7 [Environmental Obligations], the Contractor will, in reporting an Environmental Incident, use the incident report form set out in Appendix 7-1 [Contractor Environmental Incident Report Form], or such other form as Hydro's Representative may from time to time require.

## **7 ORIENTATION, TRAINING AND ENVIRONMENTAL TAILBOARD MEETINGS**

### **7.1 Environmental Overview Training**

Prior to commencing the performance of the Work at the Site, the Contractor will hold, and will cause its field crew supervisors and Environmental Monitors to attend, an environmental overview and training workshop, which will include the following, as applicable to the scope of the Work at the Site:

- (a) the requirements of the EPPs applicable to the scope of the Work;
- (b) the roles and responsibilities of BC Hydro, the Contractor, the Qualified Environmental Professional(s) and the Environmental Monitors;
- (c) environmental mapping of Environmentally Sensitive Areas; and
- (d) procedures for reporting of Environmental Incidents and emergencies.

### **7.2 Pre-Work Orientation**

The Contractor will hold, and will cause all of its employees and agents, and the Subcontractors and their employees and agents to attend, a pre-work orientation meeting (a "**Pre-Work Orientation**") prior to commencing the performance of the Work or component of the Work at the Site to inform its employees and agents, and the Subcontractors and their employees and agents of the Site-specific environmental requirements set out in the applicable EPP(s). The Contractor will document all Pre-Work Orientations and provide such documentation to BC Hydro upon request.

### **7.3 Environmental Tailboard Meetings**

The Contractor will, prior to commencing the performance of the Work at the Site, and at regular intervals thereafter as required by the nature of the Work, hold field crew environmental tailboard meetings (each, an "**Environmental Tailboard Meeting**") to discuss information including the following, as applicable:

- (a) Environmentally Sensitive Areas, potential effects and applicable mitigation measures; and
- (b) construction activities planned.

The Contractor will document all Environmental Tailboard Meetings and provide such documentation to BC Hydro upon request.

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

**APPENDIX 7-1**

**CONTRACTOR ENVIRONMENTAL INCIDENT REPORT FORM**

(see attached)

