BC Hydro
Power smart

CONTRACTING PLAN

Site C Clean Energy Project

Powerhouse Bridge and Gantry Cranes Contract

RFP No. 7924 / CR No. 632593

Date: June 16, 2017

Version 3.0

1. PURPOSE

The purpose of this Contracting Plan is to obtain approval (at a summary level) for Infrastructure Projects Supply Chain – Site C Procurement to execute the competitive bid process for the Powerhouse Bridge and Gantry Cranes Contract ("Cranes Contract") that includes the design, supply, installation of two powerhouse bridge cranes, one rotor lifting beam, one headworks gantry crane and one tailrace gantry crane ("Cranes"), and commissioning and maintenance services for the Cranes up to the completion of the Site C Project ("Project"), in accordance with this Contracting Plan.

2. GENERATING STATION AND SPILLWAYS DESCRIPTION

In June 2012 the Board of Directors approved a Procurement Approach for the construction of the Site C Project (the Project), which defined the scope of the major contracts and their delivery models. The approved approach for the generating station and spillways work was a single contract encompassing Generating Station and Spillways Civil Works ("GSS Civil Works"), Hydro-Mechanical Equipment supply ("HME") and powerhouse completion (including all equipment supply and installation).

In September 2015 the Site C Project Board and the Board of Directors approved an amendment to the Site C Procurement Approach that provided for:

- HME, including the gates and cranes to be procured by BC Hydro and installed by a GSS Civil Works contractor; and
- powertrain balance of plant equipment (e.g. transformers, switchgear, generator terminal equipment, circuit breakers, etc.) to be procured by BC Hydro and installed by a specialist completion contractor.

The cranes included in the above HME supply package were the headworks and tailrace gantry cranes that will be used for lifting the gates and stoplogs. Powerhouse bridge cranes were not explicitly referred to in the board update; however in keeping with the overall approach in the update, the two 320-ton-powerhouse bridge cranes would be procured as a separate supply contract.

This contracting plan is to combine the supply and installation of the gantry cranes, that were originally included in the HME supply package, and the supply and installation of the powerhouse bridge cranes into one public RFP.

This contract has a number of key interfaces with the GSS Civil Works Contract, which is referred to in this contracting plan where relevant.

3. CONTRACTING APPROACH FOR CRANES

In June 2012, the BC Hydro Board of Directors was presented with the results of the KPMG Options Report which indicated that all GSS equipment (assumed to include the cranes) could be procured in multiple supply contracts. The GSS contractor would be responsible for the installation of all equipment.

In September 2015, the BC Hydro Board of Directors was presented with a refined approach that stated the hydro-mechanical equipment including cranes (assumed to be the gantry cranes) would be separated into a standalone supply contract while the installation would remain with the GSS contractor.

In September 2016, the gantry cranes were removed from the hydro-mechanical equipment scope of work and combined with the powerhouse bridge cranes to be a single supply contract

with the installation to be completed by the GSS Civil Works contractor.

During the development of the Contracting Plan and specifications, the approach has been refined so that the cranes supplier will be more involved with the installation. The current approach is to have the GSS Civil Works contractor supply and install the rails, install the power conductors, and provide craneage services to lift the cranes into place. The cranes contractor will be responsible for pre-lift assembly, supervision of the lift, alignment, final assembly and installation of remaining components and the testing and commissioning of the cranes. This refined approach will be included as an update in June 2017 Procurement Update Report to the Board of Directors.

4. POWERHOUSE BRIDGE AND GANTRY CRANES SUPPLY AND INSTALL CONTRACT ("CRANES CONTRACT") REQUIREMENTS

4.1 Scope of Work

The scope of work for the Cranes Contract includes the:

1. design, supply, installation and commissioning of two 320 tonne capacity electric overhead bridge cranes;
2. design, supply, installation and commissioning of one 130 tonne capacity electric headworks gantry crane;
3. design, supply, installation and commissioning of one 80 tonne capacity electric tailrace gantry crane;
4. design and supply of crane power conductors, power conductor supports, emergency stop systems and electrical disconnect switches (installation by other contractor);
5. design and supply of temporary and permanent end stops (installation by other contractor);
6. design and supply tandem lifting beam for the powerhouse bridge cranes for lifting the generator rotor (main shaft lifting beam will be supplied by turbine-generator contractor);
7. design and supply of lifting beams monitoring systems
8. provision of training for BC Hydro personnel;
9. provision of spare parts;
10. provision of crane maintenance services during construction; and
11. provision of site supervision for observation of related Work performed by other contractor.

4.2 Related Work by other contractors:

Other contractors shall perform the following items related to the Work:

1. offloading of the Cranes at site and provision of temporary storage (until the Cranes are ready for installation by the Contractor) will be performed by the GSS Civil Works contractor;
2. transportation of the Cranes components from the temporary storage area to the installation area will be performed by the GSS Civil Works contractor;
3. provision of craneage services for erecting the Cranes will be performed by the GSS Civil Works contractor;

4. installation of the Cranes power conductors, power conductor supports, temporary emergency stop systems, electrical disconnect switches; temporary and permanent end stops will be performed by the GSS Civil Works contractor;
5. provision of construction power at site for testing and commissioning the cranes will be performed by the GSS Civil Works contractor;
6. supply and installation of crane rails will be performed by the GSS Civil Works contractor;
7. supply of test-weights for Cranes tests at site will be performed by the GSS Civil Works contractor;
8. supply of the lifting beam for the gantry cranes including the installation of the cameras and the limit switches, will be performed by the HME contractor; and
9. installation of the lifting beams monitoring systems for the gantry cranes will be performed by the installer of the HME.

4.3 Other Crane and Hoist Work for the Generating Station and Spillways

All other small cranes and hoists for the generating station and spillways will be supplied by other contractors. Hoists for operating the gates will be supplied by the HME contractor (installation to be performed by the HME installer) while all other cranes and hoists (e.g. shop crane) will be supplied and installed by the completion contractor.

4.4 Financial

The following estimate is based on the budget and schedule approved as part of the Final Investment Decision in December 2014. As referenced in Section 2 of this contracting plan, the packaging of the project scope into contracts has been modified since the Final Investment Decision, so the estimate below is an indicative estimate and will have to be further refined through a detailed review of the scope and contract packaging.

The Contract Requisition (CR) for this contract has been routed for approval in PassPort based on the estimated value including contingenc[redacted] the following Work Packages:

- YM-80004.4.H.04.001 "Supply and Install Powerhouse Bridge Cranes"
- YM-80004.4.H.05.001 "Supply and Install Draft Tube Gantry Crane"
- YM-80004.4.E.09.001 "Supply and Install Gantry Crane"

The amount in the CR will be amended upon contract award to reflect the actual contract value and contract contingency.

Upon acceptance, this Contracting Plan will be attached to the CR and the CR will require approval in accordance with BC Hydro's Financial Authority Approval Policy (**"FAAP"**).

Note that the ultimate contract value will depend in part on the technical and commercial risk allocation in the final contract, which is subject to refinement during the proposals phase of the competitive selection process.

Description	Qty.	Unit	Unit Price	Sub-Total	Contingency (10%)	Total
Powerhouse Overhead Crane	2	Ea.	[redacted]			
Headworks Gantry Crane	1	LS				
Tailrace Gantry Crane	1	LS				
Maintenance	1	LS				
Grand Total						

**These costs are based on 2014 estimate.

Site C Project EAR Value (Expected Amount):	[redacted]
Approved on:	2014-12

5. MARKET ENGAGEMENT

5.1 Market Communications Undertaken

5.1.1 Website Fact Sheet

A two-page fact sheet was posted on the Site C Project website in March 2016, outlining three major contracts associated with the GSS component of the Site C Clean Energy Project: the GSS Civil Works contract, the HME contract, and the Cranes contract.

The fact sheet provided a summary of:

- The scope of the three contracts;
- The stages of the procurement process; and
- An indication of the procurement schedule.

5.1.2 Market Sounding

In March 2016, BC Hydro, in conjunction with Partnerships BC, held a series of market sounding sessions with 21 firms who were identified as potential market respondents to the following three contracts:

(a) Generating station and spillways civil contract (for the GSS Civil Works contract);

(b) Hydro-mechanical equipment supply contract (for the HME contract); and

(c) Powerhouse bridge crane supply contract (for the Cranes contract).

The purpose of the market sounding exercise in March 2016 was to confirm market interest in the three contracts and discuss key elements in advance of procurement including:

(a) The proposed procurement and construction schedules;

(b) The labour strategy;

(c) The proposed contract packaging; and

(d) Certain commercial provisions including payment terms and performance security.

A market sounding package was distributed to each participant in advance of the sessions, and a report is available that identifies general themes and issues identified during the meetings, as well as specific concerns or suggestions. Particular comments, however, are not attributed to specific participants in order to maintain confidentiality and to encourage open and frank discussion with participants.

The market sounding exercise confirmed that there is significant interest in participating in the three contracts, and all market sounding participants indicated sufficient capacity to do the work described generally within the timelines laid out in the construction schedule provided with the market sounding package.

Broadly speaking, for all participants, including potential civil, hydro-mechanical equipment and crane contractors, the following themes generally emerged:

(a) Early and frequent communication between contractors, suppliers and BC Hydro will be a key element to the success of the work, including technically with respect to design integration, logistically, and in terms of the labour relations on site.

(b) There is a significant role for BC Hydro to work proactively with contractors and suppliers at

site to manage interfaces and establish early a tone that is positive and respectful and that enforces rules and deals with issues promptly.

(c) There needs to be a clear delineation of scope and communication of schedule expectations among the various contractors and suppliers.

Additional themes that emerged from the cranes contractor participants:

(d) Most expressed the need to commission their own equipment.

(e) Highly desirable contractual terms were identified:

- Having options relating to security including bonding or letters of credit;
- Providing a balanced contract in terms of incentives and penalties; and
- The payment milestones should align with disbursements so the contractor is in a cash neutral position.

(f) Participants indicated the proposed procurement schedule for the RFQ and RFP process was reasonable, and that overall the proposed construction schedule is reasonable. However:

- Failure by other contractor(s) to achieve interface milestones could impact the Cranes schedules.
- All timelines are subject to the level of specifications and the approach to the design; third-party involvement in design can add time to the schedule.
- Prompt, reasonable turnaround time on design approvals by BC Hydro is necessary to achieve schedule.

(g) Liquidated damages could be applied on a daily or weekly basis. However, most potential proponents preferred a cap of 10% of contract value, and several preferred 5% maximum.

(h) Participants felt that a fixed-price payment structure based on milestone payments was acceptable and standard for the industry. Generally, up to 80% payment to the point of site delivery was acceptable in accordance with the following breakdown::

- Design approval 10%
- Procurement of major materials/components 50%
- Delivery to site 20%
- Installation/commissioning 20%

Note: BC Hydro will determine the milestone payments for the Cranes Contract in the RFP document. It will have to align with the requirement of the performance security (bonds or Letter of Credit) in the Contract document to cover the risk of payments prior to delivery to site.

5.2 Planned Market Communications

To support the issue of the Request for Proposal (RFP) for the Cranes Contract, the following communications and market engagement activities are planned:

(a) Post the public RFP to BC Bid;

(b) Issue procurement update to:

- The Site C Business Directory including market sounding contacts;
- Local, regional and provincial business associations;
- First Nations;
- Local and regional governments; and
- Media.

(c) Update Site C Business Opportunities webpages; and

(d) Advise Site C project team of RFP release.

6. PROCUREMENT PROCESS

6.1 Sourcing Strategy

BC Hydro will issue a public RFP through BC Bid that will include the RFP requirements, the scope and the draft contract. The draft contract will include the performance specifications, reference documents, and the commercial terms.

A Request for Qualification (RFQ) will not be required for the Cranes Contract due to the following reasons:

- Procurement and BC Hydro crane experts have identified a limited number of qualified contractors within North America who can supply the Cranes to meet the requirements of the Project.

  BC Hydro's recent public sourcing events for similar cranes have resulted in submissions from the same limited number of known contractors. The contracts have been awarded to crane contractors that BC Hydro regularly works with. These known contractors were also pre-qualified (evaluated and approved to meet BC Hydro standard requirements) under RFSQ 1966 Fixed Cranes and Hoist Replacement, Upgrade, Inspection and Maintenance.

  In each of these procurements over the past seven years, no contractors outside of North America have shown interest and have not submitted a proposal/tender.

  Considering the regular maintenance requirements of these cranes until the completion of the Project (approx. 4.5 years from installation), it is likely that international contractors will either have to find a local crane maintenance provider to sub-contract the work to, otherwise it will be difficult for them to compete with contractors with more local presence.

- A two-stage procurement process which has been used for the larger Site C procurements, would add unnecessarily 14-16 weeks that could delay the award of the Cranes Contract. This will not be ideal due to a number of key interface dates with other contracts within the powerhouse.

BC Hydro also reviewed *RFSQ 1966 Fixed Cranes and Hoist Replacement, Upgrade, Inspection and Maintenance* to determine if could meet the Cranes Contract requirements. Procurement determined that RFSQ 1966 can't be used mainly because each of the prequalified suppliers have their own contracts, which were established from BC Hydro standard Supply and Install contract. Each supplier has taken exceptions to BC Hydro General Conditions resulting in different contracts. From a fairness view, issuing an RFP to each of these pre-qualified suppliers would result in comparing proposals based on different terms and conditions, therefore significant effort would have to be made to establish a quantifiable amount on these contractual differences.

6.1.1 Sourcing Mechanism

An RFP is being developed based on the Hydro-Mechanical Equipment RFQ and RFP.

The RFP documents will include the following mandatory item:

- The submission time/closing time of the RFP.

The RFP will include language that will allow BC Hydro, at our sole discretion, to award the powerhouse bridge cranes work and not include the headworks and tailrace gantry cranes work. This will ensure that supply of the powerhouse bridge cranes are not delayed, as they are on the critical path for the project and interface with multiple other contracts.

The RFP will also include the ability for an early works agreement (EWA) to mitigate the same risk of a delayed award. The intent of this EWA would be to allow the contractor to begin the design of the powerhouse cranes.

6.2 Fairness Monitor

The fairness monitor is not required for the Cranes Contract as the estimated value of the contract is below the threshold requiring BC Hydro Board approval. The procurement process for this contract is more standard than some of the other larger contracts, which involve early collaboration with shortlisted proponents.

6.3 Relationship Review Committee

A relationship review committee will be established to review relationships disclosed by proponents and evaluators, and to determine the following in accordance with the rules in the RFP:

- Whether any proponent/evaluator has a conflict of interest or an unfair process advantage, whether it is existing now or is likely to arise in the future; and
- Whether to permit the proponent/evaluator to continue its participation in the competitive selection process, and whether to impose any conditions that may be in BC Hydro's interests and the interests of the Project, having regard to BC Hydro's commercial objectives and the competitiveness, fairness and integrity of the competitive selection process.

It is anticipated that the relationship review committee will comprise:

- [redacted]
- [redacted]

6.4 Procurement Schedule

The anticipated procurement schedule is outlined in the following table.

Activity	Timeline
Approved Contracting Plan	Jun 23, 2017
Senior Management Approval to issue the RFP	Jun 26, 2017
RFP issue	Jun 30, 2017
BC Hydro arranged Site Visit for the potential proponent(s)	Jul 18, 2017
RFP Closing Time *(10 weeks from RFP issue to Closing Time)*	Sept 8, 2017
Extended request for qualifications submission time *(2 weeks extension available if requested)*	Sept 22, 2017
Complete evaluation *(5 weeks from extended RFP Closing time to completion of evaluation)*	Oct 27, 2017
Brief management and Senior Management acceptance of preferred proponent and negotiation *(1 week to brief management and approval)*	Oct 30-31, 2017

Activity	Timeline
Recommendation to Negotiate (RtN) approved *(1 week from brief management approval)*	Nov 6, 2017
Notify preferred proponent	Nov 6-7, 2017
Negotiate with preferred proponent *(2 weeks period to finalize contract)*	Nov 8-23, 2017
Senior management to approve recommendation to award. *(3.-weeks period, including finance due diligence review and within which senior management meeting can be scheduled)*	Nov 24- Dec 14, 2017
Contract award	Dec 18, 2017

6.5 Request for Proposals

The RFP will define the submission requirements and set out the evaluation criteria and the process of evaluation. Proponents will be required to include work plans in their technical proposals, outlining how they intend to meet various contractual obligations.

Attached to the RFP will be a draft contract, including performance specifications and drawings, which will form the basis of the proponent's proposal.

Several tools are planned to be used in the proposals phase of the procurement process:

a) Restricted folder at BC Bid: this tool will be used to provide proponents access to reference documents for information about the Project that may help them better understand the conditions at site as relates to the Contract scope.

b) Site visit: BC Hydro will provide proponents with the opportunity to undertake site inspections during the proposal stage. The intent of the site inspections will be to enable proponents to better understand the site, thereby facilitating the submission of competitive proposals.

6.5.1 Summary of Evaluation process:

After procurement executes the compliancy check list and obtains approval from the relationship review committee (see Section 6.3), procurement will distribute the proposals to the Evaluation Committee.

The Evaluation Committee will perform a technical pass/fail assessment based on the requirement set out in Appendix A [Evaluation of Proposal] in the RFP, prior to fully evaluating proposals. The proposals which do not meet these requirements will be deemed as having failed the technical requirements and will not be evaluated further.

Proposals that pass the technical pass/fail assessment will proceed to the Financial Capacity pass/fail assessment, which will be performed by the financial capacity evaluation team. The Evaluation Committee will proceed with the full technical, qualification, safety and environmental evaluation in parallel with the Financial Capacity assessment.

Proposals that pass the financial capacity assessment *and* receive greater than total 25 points from the evaluation of technical, qualification, safety and environmental will then be evaluated for pricing. Pricing evaluation will be performed by the Evaluation Committee with the support of Finance team member and Project Estimating team as the subject matter experts.

The Evaluation Committee will select the lead proponent who receives the highest score in total.

6.5.2 *Evaluation Criteria*

The evaluation criteria presented in the following table, will be included in the RFP document.

Evaluation Criteria	Scores
[redacted]	

6.5.3 *Evaluation Scoring Breakdown Justification:*

[redacted]

6.5.4 *Evaluation Committee*

The evaluation committee and their evaluation responsibilities will be identified prior to the RFP closing. The evaluation committee is expected to be made up of individuals with expertise in the following areas:

- Project management;
- Construction management; and
- Engineering.

The evaluation committee will be supported by a financial evaluation team that will evaluate the financial capacity submittals.

The evaluation committee will be supported by subject matter experts as required, including from the following areas:

- Project estimating;
- Project scheduling;
- Quality;
- Safety;
- Environment;
- Labour.
- Legal;
- Finance; and
- Procurement.

7. CONTRACT

The Cranes Contract will be structured in a format familiar to the market, with key subject matters, such as the specifications and the drawings, collected in schedules for easy reference. The contract, including the specifications, will be based on the Site C design, supply and install contract. Additional clauses will be added for the maintenance services work, and some clauses from the turbine-generator and HME contracts may be added as required, to reflect supply and install specific provisions. Other updates to this contract will be minimised and made only as necessary to:

i) account for the different scope and risk allocation;

ii) account for project changes, e.g. to community commitments or environmental obligations; and

iii) improve upon the turbine-generator and HME contracts if the value of the improvement outweighs the value of maintaining consistency with the standard BC Hydro supply and install contract. Improvements may be suggested by:

   a. project team members involved in the implementation of the turbine-generator and HME contracts;

   b. internal reviewers of the HME contract; and/or

   c. proponents.

7.1 Design-Build

The Cranes Contract will be a design-build contract in which BC Hydro will specify its requirements by providing performance specifications, reference drawings and interface requirements, and the Contractor will be responsible for designing, supplying, installing and commissioning the equipment in accordance with these requirements.

The design-build model is the industry norm for this type of work. This model had been exercised in previous crane supply and install contracts for BC Hydro's capital projects; for example:

- the design and supply, with installation work as the optional item, of one 240-tonne powerhouse crane at Ruskin Generating Station. The optional item (installation) was executed by this contract [redacted]
- the design, supply and install of one 150-tonne powerhouse and tailrace crane at Ladore Generating Station that was awarded in March 2017 [redacted]

The designs of powerhouse bridge cranes and gantry cranes are highly specialized and the best risk transfer is achieved by having the equipment Contractor do the detailed design, with reference design and performance requirements provided by the owner.

The Site C integrated design team, comprising [redacted] are responsible for preparing the performance specifications, reference drawings and interface requirements, based on BC Hydro's user requirements. BC Hydro is responsible for reviewing the Site C integrated design team's deliverables. The Professional of Record will be provided by the Crane Contractor and BC Hydro will review and accept the design.

BC Hydro considered lessons learned from operating powerhouse bridge cranes and gantry cranes, particularly from safety incidents, in defining the user requirements.

7.2 Payment

It is anticipated that the Cranes Contract will be fixed-price with milestone payments. This method will encourage proponents to submit competitive prices based on the performance specifications, and incent compliance with milestone dates. Consideration will be given to payment terms that will keep the Contractor in a cash-flow neutral position, such payments for design approval, and procurement of major materials/components. BC Hydro will not pay greater than 80% of the contract value prior to equipment delivery to site. This requirement will be stated in the Schedule 11 Price and Payment in the Initial Draft Contract to ensure the proponents are aware of this when deciding whether to participate in the RFP.

In order to facilitate this approach and reduce BC Hydro's risk exposure, the contract will include:

a) lump sum prices with payments based on milestone completion for the design, supply, install and commissioning for the two powerhouse bridge cranes and its equipment;

b) lump sum prices with payment based on milestone completion for the design, supply, install and commissioning for the headworks and tailrace gantry cranes including its equipment. Proponents will be asked to commit to pricing up front for the delivery of the two gantry cranes 2-3 years after the award of the contract;

c) lump sum prices with payment upon completion on each of maintenance, training and site supervision services. Repairs and any material purchase related to the services will be bases on a time and materials basis, as or when required. The RFP will request the hourly rates of personnel to perform maintenance/repair services to ensure that the lump sum price will be reasonable and competitive. The repair works will be paid under Schedule 12 Change, in the form of contract; and

d) a schedule for delivery of each component to site, with a description of the handover, relevant dates and any associated bonus and liquidated damages, so that the proponents can plan their work accordingly.

The proponents will not be required to submit a bid bond, or security deposit, with their proposal.

7.3 Key Commercial Terms

The following are some of the key commercial terms that BC Hydro anticipates will be included in the Cranes Contract:

a) Contractor's Bid in Escrow – the escrow bid document will be required to preserve the contractor's bid documents for use by both parties in the settlement of disputes and claims. BC Hydro will request the Cranes contractor to provide the escrow bid document within 30 days of the occurrence.

b) Performance Security – it is anticipated that prescribed levels of performance security will be required. At the request for proposals stage it is anticipated that proponents will have the opportunity to determine the composition of the performance security required to meet the prescribed level using options of bonding and a combination of parent guarantees and letters of credit. The performance securities will be in accordance with the standard forms developed by Marsh and reviewed, edited and accepted by Corporate Treasury, and used in the GSS Civil Works, main civil works, turbine-generator and HME contracts. The prescribed levels and acceptable combinations included in the initial draft contract will provide proponents with two options; 1) the BC Hydro corporate standard structure of performance bonds and labour & material bonds, or 2) a combination of a Letter of Credit / Parent Company Guarantee with defined amounts.

c) Insurance - will be in accordance with the insurance strategy report prepared by Marsh and approved by the Site C leadership team and BC Hydro's Corporate Risk and Treasury. BC Hydro has obtained and will maintain "wrap-up" liability and course of construction insurance, as part of the owner controlled insurance program that has been put in place for Site C. The Contractor will be responsible for obtaining any other insurance policies that they require and paying any deductibles due under the owner controlled insurance program;

d) Schedule – the Contractor will be required to perform the Cranes Contract to meet milestone dates established by BC Hydro, as well as the dates set out in the Contractor's approved project schedule. Key dates may include: design approval, delivery to site, various dates for supervision of installation, commissioning and final completion date. Particular attention will be given to issues such as shared access to work areas for other Site C contractors and handover of work areas to other Site C contractors. The dates and handover requirements will include, at a minimum, the relevant interfaces from the GSS contractor;

e) Bonus and Liquidated Damages – the Cranes Contract will include payment of bonus and liquidated damages. Due to interfaces between the Cranes contract and the GSS Civil contract (and will impact the turbine-generator contract), through delivery, installation, commissioning and handover of the powerhouse bridge cranes, there is little to no room for delays in the schedule. As such, the use of bonus and liquidated damages will be applied to the delivery, installation and commissioning of the powerhouse bridge cranes to site;

f) Worker Accommodation – BC Hydro will provide worker accommodation at the Site for

use by the Contractor's workforce. BC Hydro will inform proponents of the quantity of accommodation available, and each proponent will include in its proposal the amount and timing of the accommodation that it requires. The Contractor will then be required to provide BC Hydro with sufficient advance notice of the number of the Contractor's workers that will require accommodation at the Site during the term of the Contract, within the limits submitted in their proposal;

g) Safety and Security – BC Hydro anticipates that the GSS Civil contractor will be designated as prime contractor for all of the Contractor's main work areas. The Contractor will therefore be required to collaborate and coordinate with the GSS Civil Works contractor for safety and security purposes at site;

h) Differing Site Conditions – Similar to the GSS Civil Works and HME work, the Cranes Contract will include a clause that the Contractor is deemed to have examined the site and the local conditions and be knowledgeable of the site, and the Contractor is only entitled to claim a change to the extent the actual site or actual local conditions or both related to the performance of the Work would not be apparent to a qualified and experienced contractor upon review of the contract and inspection of the site.

i) Stakeholder Communication and Consultation – BC Hydro will have lead responsibility for all aspects of stakeholder and public communication and consultation required for Site C, including with respect to property owners and Aboriginal groups. The Contractor will be required to support BC Hydro in such communication and consultation as relevant;

j) Environmental Management - the Contractor will be required to develop and follow a plan, as part of the performance of the Cranes Contract, that complies with both BC Hydro's and the relevant regulatory agencies' requirements regarding environmental management;

k) Land Tenure – BC Hydro will acquire all land tenures required for the permanent Site C works, including the permanent GSS, as well as temporary land tenures for use during the construction of Site C;

l) Labour - the Contractor will be required to provide all labour necessary for the complete performance of the Cranes Contract, and will be responsible for recruiting and retaining skilled and qualified labour. If the Contractor is, or becomes, a party to a collective agreement with a union then the Contractor will be required to have agreements with such union(s) that include certain specified terms intended to maintain labour stability at the site, following the same requirements as for the GSS Civil Works/HME contracts; and

m) Warranty – BC Hydro will require an 8 year design warranty and request a 12 months labour and material warranty for each of the cranes effective upon commissioning and handover to BC Hydro.

n) Termination for Cause – BC Hydro will terminate the contract at any cause that may apply to both parties. BC Hydro will make commercially reasonable efforts to mitigate costs and delays, be entitled to take possession of equipment and materials, including any BC Hydro property located at Site or elsewhere use in the performance of the work.

8. KEY RISKS AND MITIGATION

8.1 Internal Resource Risk

Risk: Resource availability – resources working on the Cranes RFP are also working on the HME and GSS Civil Works procurements. Resources may be challenged to find time to develop the RFP and complete the evaluation. Vacation time may also affect the evaluation and award process.

Mitigation: Procurement had asked each key personnel to confirm their availability to perform their activities within the time frame as scheduled in Section 5.4 above. If they are not available, they will be asked to work with their respective managers to provide additional and/or alternate resources in timely manner, prior to execution of activity as scheduled.

Risk: Unqualified contractors submit proposals on a single stage procurement.

Mitigation: Procurement and engineering have determined that this is a narrow market that could build cranes of this size. Technical requirements will be hard to meet for an unqualified contractor and BC Hydro will have language in the RFP that will allow us to put a proposal aside that has been deemed to not meet the technical requirements.

8.2 Interface Milestones Risk

8.2.1 Schedule Risk

Risk: The powerhouse interface works between the Cranes contractor and other contractors may jeopardize the entire schedule if one or more schedules from the Cranes contractor and/or other contractor(s) get delayed.

Mitigation: The GSS interface contracts (including Cranes) have key milestones that tie-in with each other's schedules. Internal float will be included in the schedules to help mitigate delay. Liquidated damages may apply to these key milestones.

8.2.2 Material and Equipment Risk

Risk: The Cranes work will be performed by multiple contractors (Cranes, GSS Civil Works and HME contractors). The responsibility to carry any liability for damage or loss of the material and equipment during the handover and at site can be challenging.

Mitigation: The term and condition where the transfer of title to the contractor will be included in each contract and a clear handover process of each activity will also be part of the contracts. The risk of the works will be transferred to the contractor who will perform the work during each handover stage.

8.3 Project Risk

A risk workshop was held with key subject matter experts and a preliminary risk report developed which summarises the key risks and mitigation strategies. The report will be further updated by the Site C Commercial Manager in the coming month(s) to incorporate relevant lessons learned from the several Generation projects, which are available at the following sites:

- Mica Unit 5 and Unit 6 Project
  http://ppm/projects/GZ-0004/Lists/LessonsLearned/AllItems.aspx

- Ruskin Dam and Powerhouse Upgrade Project
http://ppm/projects/GZ-0002/Lists/LessonsLearned/AllItems.aspx (Ruskin)

- Ladore Install Powerhouse and Tailrace Crane Project
http://ppm/projects/GY-0234/Lists/RisksRegisters/OpenRisks.aspx

- Mica Powerhouse Crane Upgrade Project
http://ppm/projects/GY-0447/Lists/RisksRegisters/OpenRisks.aspx

- Hugh ~~Kinley~~ Keenleyside Nav Lock Control Replacement Project
http://ppm/projects/GY-0005/Lists/RisksRegisters/OpenRisks.aspx

- Revelstoke Upgrade Powerhouse Crane Project
http://ppm/projects/GY-0160/Lists/RisksRegisters/OpenRisks.aspx

A risk register has also been prepared for the Crane component of the Site C Project that identifies key areas of design, procurement and construction risks, as well as potential mitigation strategies. The contract risk register will be maintained as a tool to manage risk until contract close-out.

A key risk identified for the Cranes Contract is the interface with the GSS Civil Works contractor, and coordination between the parties. BC Hydro's construction management team will provide oversight to the interfaces at the site and take an active role in managing the interfaces.

Appendix B outlines the proposed allocation of some of the key risks between BC Hydro and the Contractor, based on the principle that risk should be allocated to the party best able to manage that risk. The proposed risk allocation has been developed on the basis that the procurement process will permit and facilitate the identification of an optimal risk transfer, by providing an opportunity for discussion of the risk allocation with proponents. The actual risk allocation may therefore differ from that proposed in Appendix B.

9. EXIT STRATEGIES

Exit strategies at each stage of the procurement are outlined below.

9.1 During the RFP Process:

It is anticipated that BC Hydro will, through language in the RFP reserve the complete right at any time to reject all Proposals, and to terminate the RFP, and the competitive bid process and proceed with the Contract in some other manner.

9.2 During the Negotiation Phase of the RFP Process with the Preferred Proponent

It is anticipated that BC Hydro will, through language in the RFP, reserve the right to terminate the competitive bid process if at any time for any reason BC Hydro determines that:

- It is unlikely that BC Hydro will reach a final agreement with the preferred proponent;

- The recommendation to award the Contract with the preferred proponent does not approve by the final approvers.

If negotiation with the preferred proponent is deemed unsuccessful, BC Hydro may proceed with negotiation with the second preferred proponent or proceed with the Contract in some other manner.

9.3 During the Contract's Execution

It is anticipated that BC Hydro will include in the Cranes Contract a similar termination for convenience clause as that used in the GSS Civil Works contract. The GSS Civil Works contract termination for convenience clause allows BC Hydro to terminate the contract at any time at its sole discretion.

10. SUMMARY

Based on the assessment of the project requirements, market conditions and risks pertinent to this contract package, it is recommended that the subject Contracting Plan be approved and the competitive selection process be executed in accordance with this Contracting Plan.

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11. APPROVAL

[redacted]

Prepared By: June 19, 2017 — Date

Reviewed By: June 19, 2017 — Date

Accepted By: 19 June, 2017 — Date

Reviewed By: [illegible] 2017 — Date

Reviewed By: June 19, 2017 — Date

Approved By: June 22/17 — Date