1. PURPOSE	The purpose of this Contracting Plan is to obtain internal stakeholder support and approval (at a summary level) for Procurement to commence formulation of RFSQ and RFP documents for the Expansion of the 500 kV gas-insulated switchgear (GIS) and associated switchyard equipment at Peace Canyon Generating Station (PCN) for the Site C project. This Contracting Plan outlines: 1) Basic contracting requirements; 2) The procurement template selection; 3) Expected Special Conditions or major deviations from General Conditions; 4) Evaluation Approach; 5) Procurement Schedule; 6) Key Procurement risk factors and risk mitigation strategies for the 500kV GIS at Peace Canyon Generating Station (PCN) for the Site C project; and 7) Approval process to complete and release the subject RFSQ and RFP for completion.
2. PROJECT DESCRIPTION	This project involves the interconnection of the future Site C Generating Station to the BC Hydro 500kV transmission system. The point-of-interconnection (POI) is the Peace Canyon Generating Station (PCN) 500kV GIS switchyard. The project includes the addition of two new 500 kV line positions at PCN. The three key components are: 1) Expansion of the existing PCN 500kV GIS equipment, including circuit breakers, ground switches, disconnect switches, current transformers and outdoor 500kV GIS bus; 2) Extension of existing 500 kV switchyard, including site preparation, modification of the existing ground grid, supply and installation of 500kV line terminal structures and 500kV equipment and bus supports, construction of foundations for 500kV equipment and bus including GIS bus, and the installation of 500kV electrical equipment including disconnect switches, voltage transformers (VTs) and surge arresters (SA). 3) Modifications to the existing GIS building, including civil, electrical, mechanical and control system upgrades.
3. CONTRACT REQUIREMENTS	**3.1 Scope of Work** Design, Supply, Installation, Testing and Commissioning (Design Build) of the complete 500kV switchyard and 500kV GIS system expansion at PCN, including: o Detailed design of 500kV GIS System and outdoor switchyard, such as: • 3D CAD models • grounding calculations and drawings • foundation calculations and drawings • switchyard layouts and drawings • equipment layouts and schematics

	○ Installation of 500 kV GIS system, including: • Within the existing building: ○ two 4000 A, 40 kA gas-insulated circuit breakers (5CB4, 5CB6); ○ six 500 kV gas-insulated disconnect switches (5D23, 5D24, 5D1CB4, 5D2CB4, 5D1CB6, 5D2CB6); ○ two 500 kV GIS current transformers (5CT3, 5CT4); ○ four 500 kV gas-insulated ground switches (5GD23, 5GDB3, 5GD24, 5GDB4); ○ modification, partial removal and interface with existing GIS • Outside in the expanded switchyard ○ outdoor GIS 500kV bus ○ two outdoor 500kV motor-operated disconnect switches (5D33, 5D34); ○ two outdoor 500 kV voltage transformers (5VT3, 5VT4); ○ two outdoor 500 kV surge arresters (5SA23, 5SA24). ○ Civil works including site excavation and backfill to final grade, steel structure supports and line termination towers, fencing and foundations. ○ Electrical works including grounding, equipment installation and connections, wiring, AC&DC station service system and lightning protection. Additional information pertinent to this work is as noted below: - Engineering Design: BC Hydro Transmission Engineering (TE) will provide the preliminary civil, electrical and incoming transmission overhead design, layouts and a performance based specification guide for the review of contractor's design work and BC Hydro design standards. TE will undertake the detailed design of the Protection and Control, SCADA system upgrades and interconnections and transmission O/H lines design. - Safety by Design: BC Hydro Transmission Engineering will provide the safety by design framework including hazard logs. The Contractor will be required to include safety by design features into their proposal. - Procurement: BC Hydro will supply the Protection and Control equipment and materials, SCADA equipment and materials, outdoor 500kV equipment (Disconnect switches, VTs and SAs) and control cables. All other equipment and components required will be supplied by the Contractor including foundations, support steel, line terminal structures, AC/DC panels and components, local control cabinets, electrical materials including 500kV insulators. - Construction & Installation Works: Contractor will be responsible for the installation and connection of BC Hydro supplied Disconnect Switches, Voltage Transformers, Surge Arresters, and P & C panels. - Testing and Commissioning: The Contractor will be responsible for testing and commissioning the GIS system and switchyard equipment, including the VTs and SAs and grounding system test after construction is completed. BC Hydro will perform commissioning of the complete system including the Protection and Control and SCADA systems. - Start-up & Training: Provision for instruction manual and operation training will be included in the Contract.

	3.2 Projected Spend/ Schedule Implementation Phase approval for the Site C Transmission Interconnection Project is anticipated in November 2015 for an estimated amount of [redacted] The EAR level estimate for this contract is [redacted] contingency. The In-Service Date (ISD) of the Project is December 2019 and the Design-Build contract is required to be awarded by May 2016.
4. MARKET SITUATION	Market sounding interviews were conducted from October to November 2014 and the following seven firms participated: ABB, Alstom, GE Energy, Gore-Mitsubishi (MEPPI), Hitachi, Hyosung-HICO and Siemens. All the firms supply GIS equipment globally and most could do a turnkey (Design, Build) approach. ABB, Alstom, MEPPI and HICO have a prior supply record with BC Hydro. • 500kV GIS at PCN → ABB • 500kV GIS at Mica (MCA) Units 5 & 6, 230kV GIS at Cathedral Square (CSQ) → MEPPI • 500kV GIS at MCA Units 1 to 4 → Alstom • 230kV GIS at CSQ and Sperling → HICO The most recent competition for similar 500kV GIS conducted by BC Hydro in 2009 resulted in three bid submissions and the contract was awarded to MEPPI. Based on the market sounding result, there is enough interest, capacity and capability from the manufacturers and the project team anticipates several competitive bids. It is anticipated that the manufacturers will subcontract with a local contractor for the construction and testing portion of the work. The recent market sounding has also generated interest from local contractors and it is expected that local contractors will have the capacity and capability to meet this demand. Construction labour is expected to be available from established contractors such as F&M Installations and Western Pacific Enterprises Ltd. It is expected that the design of the 500kV outdoor switchyard expansion will be subcontracted to a local engineering company that has previous experience designing BC Hydro substations, such as AMEC, SNC Lavalin or ZE Power.
5. CONTRACT PLAN	This plan includes considerations of the market sounding information received from the prospective bidders of this work. **5.1 Sourcing Mechanism** Two sourcing mechanisms were considered by the team: 1) RFP – Request for Proposal. A public RFP would be prepared and posted in BC Bid. This approach was rejected as an RFP doesn't allow sufficient ability to address design and construction risks that are inherent in the supply and installation of complex, high voltage equipment such as 500kV GIS, which will be interfacing with existing 500kV GIS equipment. New suppliers are

entering the high voltage GIS market and pricing their equipment aggressively to gain market share, while lacking the experience required to meet BC Hydro's design and construction quality and reliability requirements.

2) Two – stage RFP. RFSQ then RFP to the pre-qualified respondents only.

This is the recommended option. Using a two-stage procurement process to pre-qualify contractors and subsequently issue RFP only to the pre-qualified respondents mitigates the technical risks associated with a single stage supplier RFP process. The two stage process also allows BC Hydro to pre-qualify vendors for the supply of 500kV GIS equipment for the Site C powerhouse, which will save costs and improve long term reliability of the 500kV GIS for the Site C project.

The RFSQ process will take place while BC Hydro is preparing the RFP package from September to November. Based on the recent market sounding, Contractors are supportive of this approach. Under the two – stage process, BC Hydro will have the ability to focus more effort on the experience and qualifications of the proponents, ensuring that only contractors with sufficiently robust GIS designs and installation experience will be evaluated in the RFP stage. Evaluation of the RFP should then be easier, as the proposals can be chosen based on safety, cost and construction methodology. Also, those respondents who do not meet BC Hydro's pre-qualification requirement will be saved the efforts of preparing an RFP that they would otherwise prepare on a single stage RFP process. The following describes the two stages.

- Stage 1 is a public RFSQ to be posted on BC Bid with the purpose to pre-qualify four respondents. Only the pre-qualified respondents will be allowed to submit a proposal in the Stage 2 RFP. The RFSQ will include the Site C Generating Station 500kV GIS as an optional anticipated requirement. At their own discretion, BC Hydro Site C Team may issue separate RFP documents to the pre-qualified respondents for the Site C powerhouse 500kV GIS.
- Stage 2 is a select RFP, using the BC Hydro Standard Supply and Install template which will be issued to the pre-qualified respondents. Legal review will be sought prior to issuance of both RFSQ and RFP documents.

5.2 Site Visit

A site visit will be a mandatory requirement to submit an RFP. To reduce the risk of reduced competition due to proponent's failure to attend the site visit, additional site visits will be offered upon request and sufficient lead time (from RFP posting to site visit date) will be included in the schedule.

5.3 Contract Highlights

a. A BC Hydro standard supply and install template will be used and a single contract will be awarded to one proponent.

b. A combination of lump sum and unit price will be utilized. Fixed lump sum pricing will be secured for work components where the scope is well

defined (i.e., GIS components) while unit pricing for work components with variability (i.e., interface with existing GIS, rock removal in switchyard.).

c. The contractor will ship all the equipment and materials DDP, Delivered Duties Paid (INCOTERMS).

d. Performance security will be required, including Letter of Credit option.

e. BC Hydro will secure an owner controlled insurance policy to cover broad form builders risk and general liability. The Contractor will be responsible to arrange coverage for the deductible (amount to be determined). The Contractor will also need to insure for owned equipment and for marine/cargo insurance.

f. The RFP will require optional pricing for extended warranty coverage of up to five (5) years.

5.4 Supplementary General Conditions

The following Supplemental General Conditions are anticipated:

- Insurance provisions will be updated to cover the insurance arrangements as described in section 5.3.e. Risk/Insurance department will be requested to review the RFP insurance provisions prior to issuance.
- Five year extended warranty may be included in the final contract at BC Hydro's discretion.
- Policy with respect to apprentice engagement and reporting as introduced by the BC Government will be included.

5.5 Aboriginal Inclusion

Aboriginal Inclusion will be considered and included in the construction methodology, safety, environment and quality assurance evaluation criteria. This is based on the following considerations and currently known conditions:

- The design and supply component of this work is considered specialized and therefore limited to electrical equipment manufacturers. The site preparation, construction and installation works were identified as potential aboriginal inclusion opportunities but these portions of work are estimated to be small relative to the value of the design and supply component of the work.
- PCN resides in an area which West Moberly First Nations (WMFN) claim as their territory and there is currently no Aboriginal Procurement engagement with the WMFN under a Site C IBA.

The engagement level with respect to an IBA with WMFN or other First Nations may change during the Stage 2 RFP of the procurement process. Prior to the issuance of an RFP, the Site C First Nation Engagement Team will advise if a change to Set Aside (providing a specific $ amount in the contract to allocate for Aboriginal Inclusion) will be required. If required, The Site C FNET will provide guidance on the set aside amounts as well as the Aboriginal Inclusion reporting requirements.

5.6 Evaluation

Step 1- RFSQ

The RFSQ will focus mostly on qualifications and experience on GIS design build contracts. No details on the scope of work will be provided at this stage.

The Project Team, with inputs from Subject Matter Experts, have identified the following minimum requirements:

- Supply and Installation of 420/500kV or higher GIS in the worldwide market demonstrating a minimum of 10 years successful operation.
- ISO 9001 or equivalent Certification of the proposed manufacturing and design facilities.

Respondents meeting or exceeding the minimum requirements will be evaluated against the following evaluation criteria and weightings.

Criteria	Weight
[redacted]	

The top four (4) scoring respondents will be identified and notified as eligible suppliers qualified to submit a proposal on the Stage 2 RFP.

Step 2 – RFP

Evaluation shall proceed as per Part 1, Section 4 – Proposal Evaluation and Contract Award of the standard BC Hydro RFP document. The "High-Level Evaluation Criteria" is presented in the following table and the weightings will be included in the RFP documents.

High-level Evaluation Criteria	Weight (Out of 100%)*
[redacted]	

The Evaluation Committee (EC) will be composed of:

[redacted]

[redacted] The EC will be responsible for the preparation of the evaluation report and recommendation to negotiate/award.

The EC may be provided with advice from Subject Matter Experts ("SMEs") from the following areas:

- Project Estimating and Scheduling
- Construction Management and Commissioning
- Stations Design
- Transmission Design
- Quality Assurance
- Construction Management and Commissioning
- Aboriginal Relations (AR)
- Environment
- Safety
- Field Operations
- Site C Owner's Engineer

5.7 Procurement Schedule

The procurement schedule is as follows:

Stage 1:

• Approve Contracting Plan and CR	Oct 7, 2015
• Release RFSQ	Oct 12, 2015
• Close RFSQ	Nov 09, 2015
• Complete Evaluation	Dec 7, 2015
• Approve Recommendation to prequalify Respondents	Dec 14, 2015
• Notify Suppliers of RFSQ results	Dec 23, 2015

Stage 2:

• Prepare RFP	Oct 2015
• Release RFP Jan 2016	
• Site Visit	Feb 2016
• Close RFP	Mar 2016
• Complete Evaluation	April 2016
• Approve Recommendation for Award	May 2016
• Award contract	May 2016

5.8 Internal Approvals and Control in PassPort

CR 563501 will be raised for [redacted] and requires approval prior to issuance of the RFSQ documents. Approval of this CR must be in accordance with the Financial Approval Authority Policy (FAAP).

	Payment will be tied to milestones for the supply portion from completion of design to delivery of equipment to site. Monthly progress payment will apply on installation, testing and commissioning. Approval of invoices will be in accordance with FAAP.
6. KEY RISKS AND MITIGATION	**6.1 Key Risks** The key procurement risks and the recommended mitigating measures are as follows: 6.1.1 Design and Interface Risk: Unclear design and interface requirement to the existing GIS installations could potentially result in increased costs and claims. The RFP will specify the types of engineering studies, design and documentation that must be submitted and the applicable standards (i.e., ANSI not IEC) to be complied by the contractor. The interface with existing GIS will be unit cost/variable priced item to reduce the assumptions and loadings from bidders. 6.1.2 Supplier Performance Risk: Poor supplier performance on the design and supply of high voltage electrical equipment on previous BC Hydro projects has been the cause of significant delays and additional project costs. This will be mitigated by the two-stage RFP process that will ensure that only the most qualified contractors are permitted to participate in the RFP process. 6.1.3 Procurement risk ABB supplied and installed the existing GIS at PCN in 1974 and they may have a competitive advantage. The RFP will include the existing GIS measurements and drawings and will include an option to all contractors to take site measurements and complete the interface design. 6.1.4 Contract costs Increased commodity prices, inflation and currency exchange are potential cost adders for equipment and materials costs. Fixed pricing will be sought for the equipment supply components and ordering of supply component will be prioritized where it makes sense in order to secure pricing. Construction costs may also be higher than estimate due to the geographic location of the work. The estimate have included cost premium for this remote location work. A re-estimate will be conducted to determine if budget adjustment is necessary. 6.1.5 Schedule Risk – Procurement process or the contractor is delayed thus missing the ISD date and delaying the project overall. Sufficient float has been provided in the schedule to allow for a lengthy procurement process, based on recent, similar procurements. Schedule will be included in the evaluation criteria and pre-qualified respondents will be required to submit and provide a rationale of their schedule and work staging approaches.

	6.1.6	***Safety Risk*** – the contracted work exposes safety risk to workers and BC Hydro employees. Safety risks include motor vehicle accident accessing construction sites, worker electrical contract, loss of control of construction equipment, exposure to pressurized SF_6 equipment, uneven ground conditions, working on and near energized equipment, etc. A Safety Minimum Requirement document (SMR) will be included in the contract and the contractor will be required to create a site specific safety management plan. To ensure full compliance to regulatory requirements and to the Contractor Safety Management Plans, BC Hydro will provide regular safety oversight and audits.
	6.1.7	***Environmental Risk*** – the contracted work exposes environmental risk to BC Hydro that include the potential release of a controlled substance (SF_6), working in proximity to a creek and work near the Peace River. The Contractor is required to provide an environmental protection plan (EPP) that is in compliance with the requirements of the Project Construction Environmental Management Plan (CEMP). Contractor will be required to provide a Qualified Environmental Monitor for the work. BC Hydro will provide regular audits on the EMP/EPP compliance of the Contractor.
	6.1.8	***Quality Risk*** **Risk**: Product non-conformance resulting from poor quality in the design, manufacture, supply and installation works **Mitigation:** Key components of Quality including the following will be assessed during RFSQ evaluation: - Ability to provide knowledgeable factory representation for onsite post delivery services relating to field assembly, testing and commissioning - A robust and implemented quality management system for manufacturing and field installation works - Quality capabilities of the proposed third party inspectors, suppliers and subcontractors during manufacturing and field installation works - Technical and quality assurance experience of key persons (manufacture and field installation) responsible for quality. Pre-award design and manufacturing facility audits may be conducted.
	6.1.9	***Performance Security Risk*** The RFSQ process is being undertaken to help ensure that only the Contractors with necessary experience, capacity and capability to perform the work are allowed to submit a proposal to the subsequent RFP. The successful proponent will be required to submit a performance security to help mitigate contractor performance issues that may arise during the implementation stage.
7. NEGOTIATION & EXIT	7.1	Negotiation is allowed under this RFP either serially or concurrently. If negotiations are required, the Procurement Lead will conduct the negotiations with assistance from the Evaluation Team and subject

STRATEGIES	matter experts as required. 7.2 Exit strategies at each stage of the procurement are: 7.2.1 During the RFSQ process: • BCH is not obligated to proceed to issue stage 2 RFP or to award a contract. This general exit clause would cover event where full funding is not approved. • BCH may terminate the selection process established by the RFSQ and proceed with procurement in other manner at its discretion. 7.2.2 During the RFP process, BCH may cancel the RFP at any time. 7.2.2 Prior to the award of the contract, BCH reserves the right to terminate negotiations. 7.2.3 During the contract's implementation, the standard suspension or termination for convenience clause will be in effect.
8. SUMMARY	Based on the assessment of the project requirements, market conditions and risks pertinent to this package, it is recommended that the subject Contracting Plan be approved for preparation for competition by October 12, 2015.

APPROVAL:

Prepared by:	[redacted]	Oct. 1, 2015 Date
Reviewed by:		Oct 1, 2015 Date
Accepted by:		01 Oct 2015 Date
Reviewed by:		2 Oct 2015 Date
Reviewed by:		7 Oct 2015 Date
Approved by:		