



**RETURN BIDS TO:**

Canadian Nuclear Safety Commission (CNSC)

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**REQUEST FOR PROPOSAL**

**Proposal to: Canadian Nuclear Safety Commission (CNSC)**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Instructions: See herein**

**Issuing office:**

Canadian Nuclear Safety Commission  
280 Slater St.  
Ottawa, Ontario  
Canada K1P 5S9

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<b>Title:</b> R691.7 Performance of bentonite buffer and seals under elevated temperatures and chemical gradients	
<b>Solicitation no.:</b> 5000047068/A	<b>Date:</b> December 10, 2019
<b>File No. – N° de dossier:</b> 5000047068	
<b>Solicitation closes:</b>  <u>At 2:00 pm,</u> <u>Tuesday, January 21, 2020</u>	<b>Time zone:</b>  Eastern Standard Time (EST)
<b>Address inquiries to:</b>	
<b>Telephone:</b>	<b>Fax:</b>
<b>Email:</b> <a href="mailto:cpsc.solicitation-demandedesoumission.ccsn@canada.ca">cpsc.solicitation-demandedesoumission.ccsn@canada.ca</a>	
<b>Destination:</b> See herein	

<b>Delivery required:</b>  (See Herein)	<b>Delivery offered:</b>
<b>Supplier name and address:</b>	
<b>Telephone:</b>	
<b>Fax:</b>	
<b>Name and title of person authorized to sign on behalf of supplier (type or print):</b>	
<b>Signature</b>	<b>Date</b>



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## PART 1 – GENERAL INFORMATION

It is understood that the procurement of services for the Canadian Nuclear Safety Commission (CNSC) falls under the provisions of the *Nuclear Safety and Control Act*, S.C. 1997, c. 9.

### 1.1 INTRODUCTION

This bid solicitation is divided into six parts plus attachments and annexes, as follows:

**Part 1 General Information:** provides a general description of the requirement;

**Part 2 Bidder Instructions:** provides the instructions, clauses and conditions applicable to the bid solicitation;

**Part 3 Bid Preparation Instructions:** provides bidders with instructions on how to prepare their bid;

**Part 4 Evaluation Procedures and Basis of Selection:** indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;

**Part 5 Certifications and Additional Information:** includes the certifications and additional information to be provided;

**Part 6 Resulting Contract Clauses:** includes the clauses and conditions that will apply to any resulting contract;

**The Attachments include:**

**List of Attachments to Part 3 (Bid Preparation Instructions):**

[Attachment 1 to Part 3: Pricing Schedule](#)

**List of Attachments to Part 4 (Evaluation Procedures and Basis of Selection):**

[Attachment 1 to Part 4: Bid Evaluation Criteria](#)

**The Annexes include:**

[ANNEX A - STATEMENT OF WORK](#)

[ANNEX B - BASIS OF PAYMENT](#)

### 1.2 SUMMARY

1.2.1 The Canadian Nuclear Safety Commission (CNSC) is seeking bids from qualified suppliers to supply professional services in order to obtain experimental data on the performance of bentonite buffer and seal materials under elevated temperatures and porewater chemical concentrations. CNSC staff will use this data in the development of numerical models to assess the long-term performance of buffer and seal materials for geological disposal repositories in Canada.

A complete description of the work to be performed is provided in Annex A – Statement of Work

It is intended to result in the award of one (1) contract for a period of three (3) years commencing on the date of contract award.

Interested bidders are required to submit their proposals in accordance with the instructions provided in this RFP.

Bids can be submitted in both official languages of Canada.



1.2.2 The resulting Contract is not to be used for deliveries within a Comprehensive Land Claims Settlement Area (CLCSA). All requirements for delivery within a CLCSA are to be processed individually.

### 1.3 DEBRIEFINGS

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be provided in writing, by telephone or in person.

A de-brief is intended to:

1. Provide the Bidder with feedback on their proposal and the solicitation process;
2. Review the evaluation of the Bidder's proposal and explain where they met or failed to meet the criteria;
3. Identify strengths and weaknesses in the Bidder's proposal to assist them with preparing future proposals.

A de-brief is not an opportunity for the Bidder to debate the evaluation or request a re-evaluation of the proposal.



## PART 2 – BIDDER INSTRUCTIONS

### 2.1 STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS

2.1.1 All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](#) issued by Public Works and Government Services Canada (PWGSC).

2.1.2 Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract(s).

2.1.3 The [2003 \(2019-03-04\) Standard Instructions – Goods or Services – Competitive Requirements](#) are incorporated by reference into and form part of the bid solicitation, with the following modifications:

- delete section 02 in its entirety;
- in section 03, delete “Pursuant to the Department of Public Works and Government Services Act (S.C. 1996, c.16),”
- delete subsection 2d of section 05, Submission of Bids in its entirety;
- revise subsection 4 of section 05, Submission of Bids, as follows:

Delete: “Bids will remain open for acceptance for a period of not less than 60 days from the closing date of the bid solicitation,”

And replace with: “Bids will remain open for acceptance for a period of not less than 180 days from the closing date of the bid solicitation”.

- in sections 06 and 07  
Delete: “PWGSC”  
Replace with: “CNSC”
- delete section 8, Transmission by Facsimile or by epost Connect, in its entirety.
- delete subsections 1a and 1b of section 12, Rejection of Bid, and replace with:

a) Bidders are advised that the CNSC reserves the right to consider, as part of its evaluation, any unsatisfactory performance in a previous or current project performed by the bidder, proposed subcontractor or individual proposed resource either on contract or under previous CNSC employment.

b) Additionally, bidders shall take note that once awarded, the performance of the contractor during and upon completion of the work shall be evaluated by the CNSC. The evaluation may include all or some of the following criteria: quality of deliverables, timeliness of completion of the work, project management, contract management, and cost. Should the contractor's performance be considered unsatisfactory, the contractor may be declared ineligible for future CNSC contracts.

- add the following paragraphs to section 18, Conflict of Interest – Unfair Advantage:

Conflict of Interest – Performance of the Work

- a. The CNSC reserves the right to review real, potential or apparent conflict(s) of interest. Bidders must disclose any of their activities related to the subject of the statement of work that are licensed by the CNSC. Bidders are also required to disclose any involvement in previous, current or planned work undertaken for a CNSC licensee that is or may be related to the subject of the statement of work. Such activities or work are not in themselves grounds for rejection; however, proposals to review previous



work contributed by the bidder on behalf of a CNSC licensee, and proposals to make recommendations affecting the CNSC licensing decisions in which the bidder has a financial or non-financial interest may be rejected.

- b. Bidders must address in detail, in their submitted bids, any real, potential or apparent conflict(s) of interest they may encounter while performing the work, and must substantiate which measures they are taking to prevent the conflict(s). If in doubt about a particular situation, bidders may contact the Contracting Authority before bid closing. The CNSC reserves the right to reject any bids in which a real, potential or apparent conflict of interest exists.
- Delete subsection 2 of section 20, Further Information, in its entirety.

2.1.4 With the exception of sections 1 and 21 of the 2003 (2019-03-04) Standard Instructions – Goods or Services – Competitive Requirements, all references to "Canada", "Crown", "Her Majesty", "the Government" or "the Minister" means or is replaced by the Canadian Nuclear Safety Commission and its presiding Minister as appropriate.

2.1.5 Wherever there is a discrepancy between information in this request for proposal and the provisions of the 2003 (2019-03-04) Standard Instructions, the information in this request for proposal document shall supersede the information of the 2003 (2019-03-04) Standard Instructions.

## 2.2 SUBMISSION OF BIDS

- a. Bids must be submitted only to CNSC e-mail address: [cnsolicitation-demandedesoumission.ccsn@canada.ca](mailto:cnsolicitation-demandedesoumission.ccsn@canada.ca), by the date and time indicated on page 1 of the bid solicitation.
- b. Canada will not be responsible for late bids received at destination after the closing date and time, even if it was submitted before.
- c. Given that bids will be received by email, a confirmation of receipt of bid will be sent to the Bidder by the CNSC. CNSC is limited to individual emails of a maximum size of 15 MBs.
- d. Due to the nature of the bid solicitation, bids transmitted by facsimile to CNSC will not be accepted.

## 2.3 FORMER PUBLIC SERVANT

See [Part 5 – Certifications](#), for certification required with the bid and section [6.6 of Part 6 – Resulting Contract Clauses](#).

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the required information before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

## 2.4 ENQUIRIES – BID SOLICITATION

- 2.4.1 All inquiries must be submitted in writing to the contracting authority no later than **five (5) calendar days** before the bid closing date. Inquiries received after that time may not be answered.
- 2.4.2 Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the inquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable the CNSC to provide an accurate answer. Technical inquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where the CNSC determines that the inquiry is not of a proprietary nature. The CNSC may edit the questions or may request that the bidder do so, so that the proprietary nature of the question is eliminated, and the inquiry can be answered



with copies to all bidders. Inquiries not submitted in a form that can be distributed to all bidders may not be answered by the CNSC.

## 2.5 APPLICABLE LAWS

- 2.5.1 Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the **Province of Ontario**.
- 2.5.2 Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

## 2.6 MAXIMUM FUNDING

The maximum funding available for a contract resulting from the bid solicitation is **\$210,000** (Canadian dollars, Applicable Taxes extra).

**Bids valued in excess of this amount will be considered non-responsive.** This disclosure does not commit Canada to pay the maximum funding available.





## PART 3 – BID PREPARATION INSTRUCTIONS

### 3.1 BID PREPARATION INSTRUCTIONS

3.1.1 Canada requests that bidders provide their bid in separate sections as follows:

- i. Section I: Technical Bid (1 email copy)
- ii. Section II: Financial Bid (1 email copy)
- iii. Section III: Certifications (1 email copy)
- iv. Section IV: Additional Information (1 email copy)

**Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.**

**NB: Please note that CNSC is limited to individual emails of a maximum size of 15 MBs.**

3.1.2 **Format for Bid:** Canada requests that bidders follow the format instructions described below in the preparation of their bid :

- i. use a numbering system that corresponds to the bid solicitation;
- ii. include a title page at the front of each volume of the bid that includes the title, date, bid solicitation number, bidder's name and address and contact information of its representative; and
- iii. Include a table of contents.
- iv. Soft copies will be accepted in any of the following electronic formats:
  - Portable Document Format .pdf
  - Microsoft Word 97/2000 (.doc)
  - Microsoft Excel 97/2000 (.xls)

### 3.2 SECTION I: TECHNICAL BID

3.2.1 In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

3.2.2 The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

3.2.3 [Part 4, Evaluation Procedures](#), contains additional instructions that bidders should consider when preparing their technical bid.

### 3.3 SECTION II: FINANCIAL BID

- A. Bidders must submit their financial bid in Canadian funds and in accordance with the pricing schedule detailed in [Attachment 1 to Part 3](#). The total amount of Applicable Taxes must be shown separately.
- B. Bidders must submit their prices/rates FOB destination; Canadian customs duties and excise taxes included, as applicable; and Applicable Taxes excluded.
- C. When preparing their financial bid, Bidders should review clause [2.6 MAXIMUM FUNDING](#) (it is recommended that bidders comply with the suggested per fiscal year funding), of Part 2, [clause 4.1.2, Financial Evaluation, of Part 4](#) of the bid solicitation; and [article 6.7, Payment, of Part 6](#) of the bid solicitation.



## D. Price Breakdown

In their financial bids, bidders are requested to provide the following details for each firm lot price quoted in response to the pricing schedule detailed in [Attachment 1 to Part 3](#), as applicable:

### 1. Estimated Cost of Professional Fees

For each individual, Bidders must provide: a) the estimated cost of professional fees; and b) the cost basis (comprised of the quoted all-inclusive fixed hourly rate; and the estimated corresponding number of working hours. Bidders must specify the number of hours included in a working day, exclusive of meal breaks.

The quoted all-inclusive fixed time rate must include the total estimated cost of any local travel and living expenses that may need to be incurred for the Work described in Annex A – Statement of Work.

### 2. Estimated Cost of Incidental Goods

Bidders must: 1) identify each incidental good to be purchased; and 2) provide the estimated cost and the cost basis for each one.

### 3. Estimated Cost of Materials and Supplies

Bidders must: 1) identify each category of materials and supplies to be purchased; and 2) provide for each one, the estimated cost and the cost basis. Materials and supplies are items which will be consumed during the performance of any resulting contract.

### 4. Each trip -Travel Plan and Estimated Cost of Travel and Living Expenses

For each individual required to travel to do, deliver or perform the Work described in Part 7 of the bid solicitation, Bidders must provide for each trip: 1) the travel plan; and 2) the estimated cost of travel and living expenses not included in the professional fees (D.1 above), established in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the [National Joint Council Travel Directive](#); and with the other provisions of the directive referring to "travelers", rather than those referring to "employees".

### 5. Estimated Cost of Subcontracts

Bidders must: 1) identify any proposed subcontractors; and 2) provide a price breakdown submitted in accordance with paragraph D of this section of Part 3 of the bid solicitation for each one.

### 6. Estimated Cost of Other Direct Charges

Bidders must: 1) identify the categories of other direct charges anticipated (such as long distance communications and rental); and 2) provide the estimated cost and the cost basis for each one.

### 7. Applicable Taxes

The price breakdown must not include the Applicable Taxes.

## E. SACC Manual Clauses

[C3011T \(2013-11-06\) Exchange Rate Fluctuation](#)

### 3.4 SECTION III: CERTIFICATIONS

Bidders must submit the certifications required under [Part 5](#) of this bid solicitation.



### 3.5 SECTION IV: ADDITIONAL INFORMATION

In Section IV of their bid, bidders should provide:

1. their legal name;
2. the name of the contact person (provide also this person's mailing address, phone and facsimile numbers and email address) authorized by the Bidder to enter into communications with Canada with regards to their bid, and any contract that may result from their bid;



**ATTACHMENT 1 TO PART 3 – PRICING SCHEDULE**

The Bidder must complete this pricing schedule and include it in its financial bid.

<p><b>Total Firm Bid Price (Canadian dollars, with Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included)*:</b></p> <p>* This amount will be used as the bid evaluated price as per <a href="#">4.2.1 Basis of Selection – Highest Combined Rating of Technical Merit (60%) and Price (40 %)</a>.</p> <p><b>Cannot exceed overall maximum funding of \$210,000 (Canadian dollars, applicable taxes extra) as specified in clause <a href="#">2.6 MAXIMUM FUNDING</a> .</b></p>	<p>\$ _____</p>
<p style="text-align: right;"><i>Total Estimated Applicable Taxes:</i></p>	<p>\$ _____</p>



## PART 4 – EVALUATION PROCEDURES AND BASIS OF SELECTION

### 4.1 EVALUATION PROCEDURES

Bids will be evaluated in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

An evaluation team composed of representatives of Canada will evaluate the bids.

#### 4.1.1 Technical Evaluation

a) **Mandatory technical criteria**

Refer to [Attachment 1 to Part 4](#) of this bid solicitation.

b) **Point-Rated technical criteria**

Refer to [Attachment 1 to Part 4](#) of this bid solicitation. Point-rated technical criteria not addressed in the bid will be given a score of zero.

#### 4.1.2 Financial Evaluation

For bid evaluation and contractor(s) selection purposes only, the evaluated price of a bid will be determined in accordance with the Pricing Schedule detailed in [Attachment 1 to Part 3](#) of this bid solicitation.

The price of the bid will be evaluated in Canadian dollars, with Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

### 4.2 BASIS OF SELECTION

#### 4.2.1 Basis of Selection – Highest Combined Rating of Technical Merit (60%) and Price (40 %)

4.2.1.1 To be declared responsive, a bid must:

- (a) comply with all the requirements of the bid solicitation;
- (b) meet all the mandatory evaluation criteria; and
- (c) obtain the required minimum number/percent of points for the technical evaluation criteria which are subject to point rating.

4.2.1.2 Bids not meeting 4.2.1.1 (a) or (b) or (c) will be declared non-responsive. Neither the responsive bid obtaining the highest number of points nor the one with the lowest evaluated price will necessarily be accepted.

4.2.1.3 The lowest evaluated price (LP) of all responsive bids will be identified and a pricing score (PS), determined as follows, will be allocated to each responsive bid (i):  $PS_i = LP / P_i \times 40$ .  $P_i$  is the evaluated price (P) of each responsive bid (i).

4.2.1.4 A technical merit score (TMS), determined as follows, will be allocated to each responsive bid (i):  $TMS_i = OS_i \times 60$ .  $OS_i$  is the overall score (OS) obtained by each responsive bid (i) for all the point rated technical criteria specified in [Attachment 1 to Part 4](#), determined as follows: total number of points obtained / maximum number of points available.

4.2.1.5 The combined rating (CR) of technical merit and price of each responsive bid (i) will be determined as follows:  $CR_i = PS_i + TMS_i$ .

4.2.1.6 The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract. In the event two or more responsive bids have the same highest combined rating of technical merit



and price, the responsive bid that obtained the highest overall score for all the point rated technical criteria detailed in [Attachment 1 to Part 4](#) will be recommended for award of a contract.

4.2.1.7 The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of the technical merit and price, respectively.

<b>Basis of Selection - Highest Combined Rating of Technical Merit (60%) and Price (40%)</b>			
<b>Bidder</b>	<b>Bidder 1</b>	<b>Bidder 2</b>	<b>Bidder 3</b>
<b>Overall Score for All the Point Rated Technical Criteria</b>	OS1: 120/135	OS2: 98/135	OS3: 82/135
<b>Bid Evaluated Price</b>	P1: C\$60,000	P2: C\$55,000	LP and P3: C\$50,000
<b>Calculations</b>	<b>Technical Merit Score (OSi x 60)</b>	<b>Pricing Score (LP/Pi x 40 )</b>	<b>Combined Rating</b>
<b>Bidder 1</b>	120/135 x 60 = 53.33	50/60 x 40 = 33.33	86.66
<b>Bidder 2</b>	98/135 x 60 = 43.56	50/55 x 40 = 36.36	79.92
<b>Bidder 3</b>	82/135 x 60 = 36.44	50/50 x 40 = 40.00	76.44



## ATTACHMENT 1 TO PART 4 – EVALUATION PROCEDURES

### Evaluation Disclaimer

The Technical Evaluation of the bids will be performed in two phases as follows:

#### Evaluation Phase 1: Mandatory Criteria

The mandatory criteria will be evaluated on a “Met/Not Met” (i.e. compliant/non-compliant) basis. Bids must demonstrate compliance with all of the following Mandatory requirements and must provide the necessary documentation to support a determination of compliance. Bids that fail to meet any mandatory requirements will be deemed non-compliant and will be given no further consideration.

#### Evaluation Phase 2: Point Rated Technical Criteria

The Bidder must obtain the required minimum number of points specified for the point rated technical criteria.

Overall Maximum Points Available	100
Overall Minimum Points Required	70

For each of the mandatory and point rated requirements listed below, the Bidder must provide, for each proposed resource, a copy of the resource curriculum vitae (CV) as well as summaries of projects outlining the qualifications and experience listed below, for both Corporate Criteria and Resources Criteria. It is the responsibility of the Bidder to indicate in the “Reference to Bidder’s Bid”, where in the Bid, the information can be found. The Bidder must be compliant with the mandatory criteria for the bid to be declared responsive, and to proceed to the point-rated evaluation. In its bid, the Bidder should provide one evaluation grid for each proposed resources. The submission must include the full name of the proposed resource and education and academic qualifications for each resource presented.

Summaries of project outlining the corporate and resources experience to support compliance should include:

- a. Project Title
- b. Description of project
- c. List of tasks performed by the resource
- d. Start and end date of project (if end date applies) (dates must include month and year)
- e. Start and end date when the resource actually worked in this capacity on this project (dates must include month and year)
- f. Reference contact information that includes name and email. The reference must be a person who was either the Project or Technical Authority, or the supervisor or employer of the resource, if an employee.

Indicate the location in your bid where the requested information can be found for both the mandatory and point rated requirements.

**Merely stating the experience is not sufficient and the bid will be deemed non-compliant.**



Example: If the mandatory and point rated criteria demands experience in gathering, analyzing and validating findings, it is not sufficient just to state the resource has experience gathering, analyzing and validating findings. The experience must be demonstrated and a reference made to the specific location in the resume where corroborating information can be located in the manner indicated above.

The Contracting Authority reserves the right to request reference(s)\* from any of the listed projects to verify and validate the information stated in the bid. If the reference is unable to verify or validate the information stated in the proposal, the bid will be deemed non-compliant.

## Definitions

### A. Resource Categories

For the purpose of this evaluation, resource categories are defined as follows:

- a) A Senior resource is defined as having more than 10 years of experience in their field of expertise
- b) An Intermediate resource is defined as having between 5 and 10 years, inclusive, of experience in their field of expertise
- c) A Junior resource is defined as having less than 5 years of experience in their field of expertise.

### B. Experience Time Frame

All experiences time-frames provided for evaluation is experience gained by bid closing date. Any experience described after bid is closed will not count towards experience.





### Mandatory Criteria

The bid must meet the mandatory criterion specified below. The Bidder must provide the necessary documentation to support compliance with this requirement.

Bids which fail to meet the mandatory criterion will be declared non-responsive.

#	Mandatory Criteria	Met / Not Met	Bidder's cross-reference to proposal
M1	The resource proposed by the Bidder as the Principal Investigator must have experience in the study of bentonite and bentonite related materials and must not have conducted research for the <a href="#">Nuclear Waste Management Organization</a> on the properties, behaviour or performance of bentonite.		

### Point Rated Technical Criteria

Bids which meet all the mandatory criteria will be evaluated and scored as specified in the tables inserted below.

Bids which fail to obtain the required minimum number of points specified will be declared non-responsive. Each point rated technical criterion should be addressed separately.

#	RATED CRITERIA	MAX POINTS	SCORES TO BE ASSIGNED BASED ON THE FOLLOWING	Bidder's cross-reference to proposal
R1	The Bidder should demonstrate their depth of understanding of the objective and scope.	10	<p><b>0 Points</b> - understanding of scope and objective not demonstrated or addressed</p> <p><b>2 Points</b> – given verbatim from RFP and/or understanding is not fully demonstrated</p> <p><b>6 Points</b> - good understanding of scope and objectives</p> <p><b>10 Points</b> - in-depth understanding of scope and objective fully demonstrated by illustrating with supporting references and/or evidence from his/her past experience that he/she has</p>	



			dealt with projects with similar scope and objective.	
<b>R2</b>	The Bidder should identify potential issues that could affect the outcome of the work; and provide solutions to mitigate these issues.	<b>10</b>	<p><b>0 Points</b> – fails to identify any potential issues</p> <p><b>1 Points</b> – 1 potential issue identified</p> <p><b>2 Points</b> – 2 potential issues identified</p> <p><b>3 Points</b> – 3 potential issues identified.</p> <p><b>4 Points</b> – 4 potential issues identified</p> <p><b>5 Points</b> – 5 or more potential issues identified</p> <p><b>Proposed Solutions to Mitigate Above Identified Issues:</b></p> <p>1 point to propose a solution to mitigate each of the above identified issues. Maximum of 5 points</p> <p><b>Score if less than 5 issues can be identified:</b></p> <p>If the Bidder can <u>fully demonstrate</u> no other issues beyond those identified above is possible:</p> <p><math>X \text{ point(s)} = (5 - \# \text{ points for identified issues}) \times 2</math></p>	
<b>R3</b>	The Bidder should clearly outline their approach and proposed methodology to meet the research requirements as well as demonstrate the level of success.	<b>30</b>	<p><b>0 Points</b> – not addressed in proposal</p> <p><b>6 Points</b> – approach and methodology partially address the RFP requirements.</p> <p><b>18 Points</b> – approach and methodology address the RFP requirements, but do not fully explain how success will be achieved</p> <p><b>23 Points</b> – approach and methodology fully address the RFP requirements with the possibility of success</p>	



			<b>30 Points</b> – strong approach and methodology that address the RFP requirements with strong possibility of success	
<b>R4</b>	The Bidder should demonstrate that one of the proposed resources has experience in experimental study of geomaterial.	<b>10</b>	<p><b>0 Points</b> – no demonstrated experience</p> <p><b>2 Points</b> – less than 4 years of demonstrated experience</p> <p><b>5 Points</b> – from 4 to less than 8 years demonstrated experience</p> <p><b>8 Points</b> – from 8 to less than 12 years demonstrated experience</p> <p><b>10 Points</b> – 12 years or more demonstrated experience</p>	
<b>R5</b>	The Bidder should demonstrate that the resource proposed as the Principal Investigator has experience in the study of bentonite and bentonite related materials.	<b>10</b>	<p><b>0 Points</b> – no demonstrated experience</p> <p><b>2 Points</b> – less than 4 years of demonstrated experience</p> <p><b>4 Points</b> – from 4 to less than 8 years demonstrated experience</p> <p><b>8 Points</b> – from 8 to less than 12 years demonstrated experience</p> <p><b>10 Points</b> – 12 years or more demonstrated experience</p>	
<b>R6</b>	The Bidder should demonstrate applicable experience of one of the proposed resources in geochemistry.	<b>10</b>	<p><b>0 Points</b> – no demonstrated experience</p> <p><b>2 Points</b> – less than 4 years of demonstrated experience</p> <p><b>4 Points</b> – from 4 to less than 8 years demonstrated experience</p> <p><b>8 Points</b> – from 8 to less than 12 years demonstrated experience</p> <p><b>10 Points</b> – 12 years or more demonstrated experience</p>	



R7	<p>The Bidder should demonstrate that one of the proposed resources has experience in geotechnical and/or geoenvironmental engineering.</p>	10	<p><b>0 Points</b> – no demonstrated experience</p> <p><b>2 Points</b> – less than 4 years of demonstrated experience</p> <p><b>4 Points</b> – from 4 to less than 8 years demonstrated experience</p> <p><b>8 Points</b> – from 8 to less than 12 years demonstrated experience</p> <p><b>10 Points</b> – 12 years or more demonstrated experience</p>	
R8	<p>The Bidder should demonstrate that the proposed resource that will be tasked with writing the scientific reports for the project has experience in providing quality of written skills on scientific subjects.</p> <p>The Bidder must provide a sample of scientific documentation that the proposed resource has written.</p>	5	<p><b>5 Points - Excellent:</b> The candidate's written communication is clear, concise and easily understood. It is brief and to the point. Ideas are developed logically and presented in a prescribed and reasonable sequence. The information is accurate, informative and complete. It is grammatically correct.</p> <p><b>4 Points - Very Good:</b> Communication is clear, logical and accurate. It is concise, effective and easily understood. Occasional overuse of vocabulary and occasional grammatical difficulties may exist but does not detract from the overall message.</p> <p><b>3 Points - Good:</b> Communication is effective and understandable. Some areas are vague or unclear. Sentences are logical and in an appropriate sequence. There may be occasional use of overly complex structures; some grammatical errors may occur and certain words may be overused. This does not detract from the overall message.</p> <p><b>1 Point - Weak:</b> The written communication is the minimum required for the performance of the duties. Some areas are unclear and difficult to understand. Some sentences are run-on;</p>	



			<p>some information is inaccurate or incomplete. Some grammatical errors exist and impact on the overall message. Nevertheless, the message is basically understood.</p> <p><b>0 Point</b> – No sample of scientific documentation that the proposed resource has written was provided or the sample is incomprehensible.</p>	
<b>R9</b>	<p>The Bidder should demonstrate that the proposed resource tasked with giving the oral presentations in this project has experience in providing quality of oral presentation skills on scientific subjects.</p> <p>To demonstrate this, the Bidder is requested to provide either a link to a webpage where a video recording of a presentation previously given by the proposed resource is accessible to the bid evaluation team* or provide a presentation deck of a previously given presentation about which the evaluation team will contact the proposed resource for a very brief presentation of it for assessment against this rated criterion.</p> <p>*Please be advised that no other information requested in the bid solicitation is to be provided by web link. It must</p>	<b>5</b>	<p><b>1 Point</b> - accuracy, clarity, logic, conciseness and usage (level of language, vocabulary, grammar; for speaking: posture, non-verbal communication, etc.).</p> <p><b>1 Point</b> - Listens to his or her audience, highlights the key points and facilitates understanding.</p> <p><b>1 Point</b> - Expresses himself or herself clearly, makes appropriate comments and holds others' attention.</p> <p><b>1 Point</b> - Develops ideas logically and links them together coherently.</p> <p><b>1 Point</b> - Distinguishes essential from non-essential information.</p>	



	be provided in the bid document.			
	<b>TOTAL</b>	<b>/100</b>	Minimum Pass Score: 70/100	



## PART 5 – CERTIFICATIONS

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### 5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

#### 5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the [Integrity Provisions of the Standard Instructions](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html), all bidders must provide with their bid, if applicable, the Integrity declaration form available on the Forms for the Integrity Regime website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame specified will render the bid non-responsive.

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list ([http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from [Employment and Social Development Canada \(ESDC\) - Labour's](http://www.esdc.gc.ca/eng/employment-social-development) website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list at the time of contract award.

#### 5.2.3 Former Public Servant

Contracts with former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts with FPS, bidders must provide the information required below.



## Definitions

For the purposes of this clause, “former public servant” is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

“lump sum payment period” means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

“pension” means, a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c.C-17, the Defence, 1970, c.D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c.R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c.R-11, the Members, R.S., 1985, c.M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c.C-8.

## Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes** ( ) **No** ( )

If so, the Bidder must provide the following information, for all FPS in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder’s status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

## Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction program?

**Yes** ( ) **No** ( )

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;





- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force reduction program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

#### 5.2.4 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

#### 5.2.5 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

#### 5.3 Certifications

By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.

\_\_\_\_\_  
**Signature of Bidder's Authorized Representative**

\_\_\_\_\_  
**Date**



## PART 6 – RESULTING CONTRACT CLAUSES

It is understood that the procurement of services for the Canadian Nuclear Safety Commission (CNSC) falls under the provisions of the *Nuclear Safety and Control Act*, S.C. 1997, c. 9.

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 6.1 STATEMENT OF WORK

The Contractor must perform the Work in accordance with the Statement of Work in [Annex A](#), and the Contractor's technical bid entitled \_\_\_\_\_, dated \_\_\_\_\_.

### 6.2 STANDARD CLAUSES AND CONDITIONS

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions \(SACC\) Manual](#) issued by Public Works and Government Services Canada.

With the exception of the Integrity Provisions of the General Conditions, all references to "Canada", "Crown", "Her Majesty", "the Government" or "the Minister" in the clauses and conditions included herein, including those incorporated by reference, shall mean Her Majesty the Queen in right of Canada as represented by the Canadian Nuclear Safety Commission and its presiding Minister as appropriate.

#### 6.2.1 General Conditions :

[2035 \(2018-06-21\), General Conditions – Higher Complexity – Services](#), apply to and form part of the Contract.

The text under Section 34 – Conflict of Interest and Values and Ethics Codes for the Public Service, of General Conditions 2035 referenced above is replaced by:

- i. The contractor acknowledges that individuals who are subject to the provisions of the *Conflict of Interest Act* (S.C. 2006, c. 9, s. 2) the *Conflict of Interest Code for Members of the House of Commons*, the *Values and Ethics Code for the Public Sector*, the *Treasury Board Policy on Conflict of Interest and Post-Employment*, the *CNSC Values and Ethics Code*, the *CNSC Conflict of Interest and Post-Employment Policy*, the *CNSC Directive on Reporting and Managing Financial Conflicts of Interest* and/or all other codes of conduct applicable within specific federal organizations cannot derive any direct benefit resulting from the contract.
- ii. Contractors, subcontractors, or any of their respective employees working full-time on CNSC premises must comply with the Values and Ethics Code for the Public Sector, the *Treasury Board Policy on Conflict of Interest and Post-Employment*, the *CNSC Values and Ethics Code*, the *CNSC Conflict of Interest and Post-Employment Policy* and the *CNSC Directive on Reporting and Managing Financial Conflicts of Interest*.
- iii. Post-employment procedures apply to individuals who have left the public sector.
- iv. The *CNSC Values and Ethics Code*, *CNSC Conflict of Interest and Post-Employment Policy* and the *CNSC Directive on Reporting and Managing Financial Conflicts of Interest* can be found at <http://www.nuclearsafety.gc.ca/eng/about-us/values-and-ethics/index.cfm>.

#### 6.2.2 Supplemental General Conditions

[4006 \(2010-08-16\) Contractor to Own Intellectual Property Rights in Foreground Information](#) apply to and form part of the Contract.



**6.2.2.1 License to Material Subject to Copyright (K3030C – 2010-01-11)**

1. In this section, "Material" means anything that is created or developed by the Contractor as part of the Work under the Contract, and in which copyright subsists.
2. The Contractor grants to Canada a non-exclusive, perpetual, irrevocable, world-wide, fully-paid and royalty-free license to exercise all rights comprised in the copyright in the Material, for any government purposes. Canada may use independent contractors in the exercise of Canada's license pursuant to this clause.
3. Copyright in any translation of the Material made by or for Canada belongs to Canada. Canada agrees to reproduce the Contractor's copyright notice, if any, on all copies of the Material, and to acknowledge the Contractor's title to the copyright in the original Work on all copies of translations of the Material effected by or for Canada.
4. No restrictions other than those set out in this section must apply to Canada's use of copies of the Material or of translated versions of the Material.
5. At the request of Canada, the Contractor must provide to Canada, at the completion of the Work or at such other time as Canada may require, a written permanent waiver of moral rights, in a form acceptable to Canada, from every author that contributed to the Material. If the Contractor is an author of the Material, the Contractor permanently waives its moral rights in respect of the Material.

**6.2.3 Inspection and Acceptance**

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

**6.3 SECURITY REQUIREMENT**

There is no security requirement applicable to this Contract.

**6.4 TERM OF CONTRACT**

**6.4.1 Period of the Contract**

The period of the Contract is from \_\_\_\_\_to\_\_\_\_\_ inclusive.

**6.5 AUTHORITIES**

**6.5.1 Contracting Authority**

(To be identified at contract award)

The Contracting Authority for the Contract is:

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Organization: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
 Facsimile: \_\_\_\_ - \_\_\_\_ - \_\_\_\_





E-mail address: \_\_\_\_\_

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

**6.5.2 Project Authority**

(To be identified at contract award)

The Project Authority for the Contract is:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_-\_\_\_-\_\_\_  
Facsimile: \_\_\_-\_\_\_-\_\_\_  
E-mail address: \_\_\_\_\_

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however, the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

**6.5.3 Technical Authority**

The Technical Authority for the Contract is:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_-\_\_\_-\_\_\_  
Facsimile: \_\_\_-\_\_\_-\_\_\_  
E-mail: \_\_\_\_\_.

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

**6.5.4 Contractor's Representative**

(To be identified at contract award)

**6.6 PROACTIVE DISCLOSURE OF CONTRACTS WITH FORMER PUBLIC SERVANTS**

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.



## 6.7 PAYMENT

### 6.7.1 Basis of Payment – Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ \_\_\_\_\_. Customs duties are included and Applicable Taxes are extra.

### 6.7.2 Travel and Living Expenses

All Travel and Living Expenses are included in the price of the contract. Canada will not reimburse any travel or living expenses associated with performing the Work.

### 6.7.3 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

### 6.7.4 Method of Payment – Milestone Payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in [Annex B](#) and the payment provisions of the Contract if:

- i. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- ii. all such documents have been verified by Canada;
- iii. the Work performed has been accepted by Canada.

### 6.7.5 T1204 – Information Reported by Contractor (A9116C – 2007-11-30 - modified)

1. Pursuant to paragraph 221 (1)(d) of the [Income Tax Act](#), R.S.C. 1985, c.1 (5<sup>th</sup> Supp.), payments made by departments and agencies to contractors under applicable services contracts (including contracts involving a mix of goods and services) must be reported on a T1204 Government Service Contract Payments slip.
2. To enable departments and agencies to comply with this requirement, the contractor must provide the following information prior to signature of the contract:
  - a. the legal name of the contractor, i.e. the legal name associated with its business number or social insurance number (SIN), as well as its address and postal code;
  - b. the status of the contractor, i.e. an individual, a sole proprietorship, a corporation, or a partnership;
  - c. the business number of the contractor if the contractor is a corporation or a partnership and the SIN if the contractor is an individual or a sole proprietorship. In the case of a partnership, if the partnership does not have a business number, the partner who has signed the contract must provide its SIN;
  - d. in the case of a joint venture, the business number of all parties to the joint venture who have a business number or their SIN if they do not have a business number.
3. The information must be sent to the contracting authority. If the information includes a SIN, the information should be provided in an envelope marked "Protected".

### 6.7.6 Payment by Direct Deposit

- a) Payments by direct deposit will be subject to Article 16 – Payment Period and Article 17 - Interest on Overdue Accounts, set out in [2035 General Conditions – Higher Complexity, Services \(2018-06-21\)](#) forming part of this Contract.
- b) To complete or amend a direct deposit registration, the Contractor must complete and submit to the Contracting Authority a Direct Deposit Enrolment Form, which is available on demand.



- c) It is the sole responsibility of the Contractor to ensure that the information and account number submitted to Canada via their Direct Deposit Enrolment Form is up to date. Should the Contractor's information within the Direct Deposit Enrolment Form not be accurate or up to date, the provisions identified herein under (Article 16 – Payment Period and Article 17 - Interest on Overdue Accounts, set out in [2035 General Conditions – Higher Complexity, Services \(2018-06-21\)](#) forming part of this Contract will not apply, until the Contractor corrects the matter.

#### **6.7.7 C2000C (2007-11-30) Taxes Foreign Based Contractor (If applicable)**

Unless specified otherwise in the Contract, the price includes no amount for any federal excise tax, state or local sales or use tax, or any other tax of a similar nature, or any Canadian tax whatsoever. The price, however, includes all other taxes. If the Work is normally subject to federal excise tax, Canada will, upon request, provide the Contractor a certificate of exemption from such federal excise tax in the form prescribed by the federal regulations.

Canada will provide the Contractor evidence of export that may be requested by the tax authorities. If, as a result of Canada's failure to do so, the Contractor has to pay federal excise tax, Canada will reimburse the Contractor if the Contractor takes such steps as Canada may require to recover any payment made by the Contractor. The Contractor must refund to Canada any amount so recovered.

#### **6.8 INVOICING INSTRUCTIONS**

- a. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" in the General Conditions.
- b. The original and one (1) copy must be forwarded to the following address for certification and payment.

Canadian Nuclear Safety Commission  
Finance Division  
P.O. Box 1046, Station B  
Ottawa, ON  
Canada K1P 5S9

Or submitted electronically at: [cnsf.finance-finance.ccsn@canada.ca](mailto:cnsf.finance-finance.ccsn@canada.ca)

- c. The Contractor shall include the contract number and appropriate Applicable Taxes registration number on all invoices pertaining to the contract.
- d. The last and final invoice under the contract shall be clearly marked "final invoice".

#### **6.9 CERTIFICATIONS**

##### **6.9.1 Compliance**

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire Contract Period. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor is untrue, whether made knowingly or unknowingly, Canada has the right, under the default provision of the Contract, to terminate the Contract for default.

#### **6.10 APPLICABLE LAWS**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of **Ontario**.

#### **6.11 PRIORITY OF DOCUMENTS**



If there is a discrepancy between the wording of any documents that appear on the following list, the wording of the document that first appears on the list has priority over the wording of any document that appears later on the list:

- a. these Articles of Agreement;
- b. the supplemental general conditions [4006 \(2010-08-16\) Contractor to Own Intellectual Property Rights in Foreground Information](#);
- c. [2035 \(2018-06-21\), General Conditions – Higher Complexity – Services](#);
- d. [Annex A, Statement of Work](#);
- e. [Annex B, Basis of Payment](#);
- f. the Contractor's bid dated [\_\_\_\_\_] [*insert date of bid*], as amended [\_\_\_\_\_] [*insert date(s) of amendment(s) if applicable*].

#### 6.12 FOREIGN NATIONALS

[SACC Manual Clause A2000C \(2006-06-16\) Foreign Nationals \(Canadian Contractor\)](#)

OR

[SACC Manual Clause A2001C \(2006-06-16\) Foreign Nationals \(Foreign Contractor\)](#)

#### 6.13 INSURANCE

[SACC Manual clause G1005C \(2016-01-28\), Insurance – No Specific Requirement](#)

#### 6.14 THIRD-PARTY INFORMATION

1. The contractor acknowledges that all third-party technical documents supplied for the purpose of this contract belong to the third party. The contractor shall return these technical documents to the originator upon completion of the contract.
2. The contractor acknowledges that proprietary third-party technical documents belong to the third party and shall be treated as confidential. No physical copies or digital records of technical documents shall be retained by the contractor after completion of the contract.
3. Upon completion of the contract, the contractor shall immediately return all proprietary technical documents to the originator, and shall provide the CNSC with a certificate of a senior officer of the contractor certifying such return and that no copies of proprietary technical documents, or any part thereof, in any form remain in the possession or control of the contractor.

#### 6.15 DISPUTE RESOLUTION

1. The parties must first attempt to resolve disputes arising in connection with this contract through direct good-faith negotiations. Such negotiations shall be undertaken for a maximum period of 30 working days unless resolved earlier. The parties may agree to an extension of the 30 working day period upon agreement in writing by each party.
2. All disputes, questions or differences arising in connection with this contract which cannot be resolved by the parties as set out in subsection 1 shall be resolved in an efficient and cooperative manner through mediation or any other such third-party assistance process as may be appropriate and agreed upon. Such a process shall be undertaken for at least 20 working days unless resolved earlier. The parties may agree to an extension of this 20 working day period upon agreement in writing by each party.



3. All disputes, questions or differences arising in connection with this contract, which the parties cannot resolve themselves through direct negotiations or the appropriate dispute resolution efforts discussed in subsection 2 shall be finally settled by binding arbitration.
4. The parties shall appoint a single arbitrator. The appointment of an arbitrator shall occur within 30 calendar days of the decision to proceed to binding arbitration. If such appointment has not occurred within this 30 calendar day period, then the parties shall apply to a Justice of the Ontario Court (General Division) in Ottawa to have an arbitrator appointed.
5. The arbitration shall be in accordance with the *Commercial Arbitration Act*, R.S.C., 1985, c.17 and shall take place in Ottawa, Ontario.
6. The arbitrator may appoint a secretary with the prior written permission of the parties. The fees of the sole arbitrator and of the secretary shall be shared equally by each of the parties. Notwithstanding the above, the arbitrator shall be authorized to require any party to pay the whole or part of the fees, costs and expenses. In such case, payments shall be made in accordance with the award and the award shall be final and shall not be subject to appeal.
7. This section does not apply in respect of the interpretation or application of constitutional, administrative, criminal or tax law or other law as may be determined and agreed upon by the parties. Except with respect to the laws expressly listed herein, if no agreement is reached regarding this article's application with respect to other areas of law, then the matter shall be subject to binding arbitration.
8. The parties understand that the Procurement Ombudsman appointed pursuant to subsection 22.1(1) of the *Department of Public Works and Government Services Act* will, on request, and consent of the parties, to participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term and condition of this contract and their consent to bear the cost of such process, provide to the parties a proposal for an alternative dispute resolution process to resolve their dispute. The Procurement Ombudsman will also review a complaint filed by the Contractor respecting administration of this contract if the requirements of subsection 22.2(1) of the *Department of Public Works and Government Services Act* and Sections 15 and 16 of the *Procurement Ombudsman Regulations* have been met, and the interpretation and application of the terms and conditions and the scope of the work of this contract are not in dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at [boa.opo@boa.opo.gc.ca](mailto:boa.opo@boa.opo.gc.ca).





## ANNEX A – STATEMENT OF WORK

### 1.0 Title

R691.7 Performance of bentonite buffer and seals under elevated temperatures and chemical gradients

### 2.0 Objective

The Canadian Nuclear Safety Commission (CNSC) requires the services of a contractor to obtain experimental data on the performance of bentonite buffer and seal materials under elevated temperatures and porewater chemical concentrations. CNSC staff will use this data in the development of numerical models to assess the long-term performance of buffer and seal materials for geological disposal repositories in Canada.

### 3.0 Background

The initiative for the deep geological disposal of high-level radioactive wastes [1] is currently being proposed for Canada, and is being evaluated and investigated by CNSC staff. The proposed repositories rely on both natural and engineered barriers to contain and isolate wastes from the biosphere for hundreds of thousands to millions of years. The success of these projects depends largely on the long-term performance of these barriers.

Bentonite is proposed worldwide for use in the engineered barrier system as buffer and seal materials in radioactive waste disposal facilities because its dominant montmorillonite mineral gives bentonite favourable properties of high swelling capacity, low permeability, low diffusion rate, high sorption capacity, and self-sealing characteristics. However, the stability and performance of the bentonite can be significantly affected at elevated temperatures and high pore water salinity. Radioactive wastes produce and emit heat as they decay, and the amount of heat generated, by high-level wastes especially, can be significant. Depending on the form of the radioactive waste and the amount of time that has passed before the waste is placed in the disposal facility, each canister of high-level waste could emit a different amount of heat, generating high temperature surrounding the canisters. This heat can have an adverse effect, with thermal loading leading to mechanical failure or chemical degradation of the barrier or host rock. Chemical alteration of bentonite can take place through ion exchange reactions, mineral alteration, and mineral dissolution-precipitation, which could modify the physical, hydraulic, chemical, and mechanical properties of the bentonite buffer and seals.

In Canada, the maximum temperature of the waste container outer surface is constrained by the reference design that the temperature of the buffer immediately surrounding the container will not exceed 100°C after placement [2]. While the pore water salinity in Canadian Shield at anticipated repository depths of around 500 m could be averaged to be around 23 g/l [3], a repository in Canadian sedimentary rocks could interact with brine pore water with salinity concentrations of more than 300 g/l at anticipated repository depths of more than 500 m [4]. Experimental evidence shows that salinity plays an important role in the hydraulic, chemical, and mechanical characteristics of bentonite buffer and seals [5 - 11]. The experimental results [10] show that the swell pressure of the MX-80 bentonite and the bentonite-sand (70-30) mixture is substantially decreased by high pore water salinity, while their permeabilities are increased by 2~3 orders of magnitude.

The impact of the elevated temperatures on the performance of the bentonite buffer and seals has been evidenced with many experimental results [11-18]. While some studies noted that no significant changes in hydraulic and mechanical properties have been reported for bentonite materials exposed to temperatures of at least 120°C, there is evidence that swelling potential and permeability of bentonite buffer and seals were observed to be adversely affected by a temperature less than 100°C [13, 16-17, 19-21], in particular, when there is a high potassium concentration in porewater [18, 21, 23]. Three processes associated with elevated temperatures are commonly considered to be detrimental to buffer properties, which are transformation of the strongly swelling smectite clay fraction to non-swelling illite in which the rate of illitization depends on the temperature and the porewater composition and concentration; cementation, primarily by silica that is a result of the process of smectite illitization, but may also occur due to the formation of minerals such as



calcite and gypsum, which reduces swelling pressure and increases stiffness and hydraulic conductivity; and water vapor effects. Herbert et al. [22] expected kaolinization/pyrophyllitization and Si-excess of the montmorillonite particles when MX-80 bentonite interacted with high saline solutions under room temperatures and described that the expected kaolinization/pyrophyllitization and Si-excess may lead in the long run to a significant or even total loss of swelling capacity of compacted bentonite, if high saline solutions and cement are involved. The increase in permeability and decrease in swelling potential represent a major alteration of the smectite component in the bentonite, which could compromise repository safety performance.

So far, most of the experiments conducted under elevated temperatures have used either a lower chemical concentration solution or a synthetically single salt solution. The practical relevance of the hydro-mechanical-chemical alteration of bentonite due to long-term mineral transformation under elevated temperatures and elevated porewater concentrations has not yet been fully understood. One of the remaining gaps is a detailed assessment of bentonite alterations after its interaction with high concentration multi-salt porewater solutions under elevated temperatures, representative of Canadian cases. Still open is also the quantitative relationship between alteration of bentonite and thermal and chemical gradients. Therefore, a detailed understanding of bentonite stability and performance under elevated temperatures and chemical concentrations of multi-salt porewater solutions will provide insight into the behavior of bentonite as buffer and seals in a deep geologic repository for used nuclear fuel hosted in either sedimentary rocks or crystalline rocks in Canada. The experimental results will provide information on developing numerical models to assess the long-term performance of buffer and seal materials for deep geological repositories in both sedimentary and crystalline rocks in Canada.

#### **4.0 Scope of Work**

Perform laboratory tests to obtain hydro-mechanical-chemical characteristics of MX-80 bentonite under elevated temperatures up to 95°C and elevated porewater chemical concentrations representative of porewater solutions in the Cobourg limestone of the Michigan Basin and in crystalline rocks of the Canadian Shield.

#### **5.0 Tasks to be Performed**

- 5.1 Procure equipment and material required for this project. The MX-80 bentonite must have smectite content of  $80\pm 5\%$  and a cation exchange capacity (CEC) of  $65\pm 5$  (cmol/kg).
- 5.2 Produce model waters to represent porewater in the Cobourg limestone of the Michigan Basin, at depths of approximately 700 m, and in crystalline rocks of the Canadian Shield, at depths of approximately 500 m, which will be used for this project (representative porewater compositions will be provided by CNSC staff once the contract is awarded).
- 5.3 Perform x-ray diffraction tests and chemical analyses, and/or other adequate techniques such as nano-scale imaging and elemental mapping, to quantify the mineralogy of the MX-80 bentonite that will be used for laboratory tests in this project and measure its index properties.
- 5.4 Measure swell pressure and permeability of compacted MX-80 bentonite (nominal dry density of  $1.6 \text{ Mg/m}^3$ ), hydrated with model waters at room temperature.
- 5.5 Measure swell pressure of compacted MX-80 bentonite (nominal dry density of  $1.6 \text{ Mg/m}^3$ ) hydrated with model waters at least two temperatures up to 95°C and at two times up to 1.5 years.
- 5.6 Perform x-ray diffraction tests and chemical analyses, and/or other adequate techniques such as nano-scale imaging and elemental mapping, to quantify the mineralogical alteration and/or mineral dissolution-precipitation of bentonite samples taken from Task 5.5 at different temperatures and times.
- 5.7 Measure permeability of bentonite samples taken from Task 5.5 at different temperatures and times, hydrated with model waters or de-ionized water.
- 5.8 Measure diffusion coefficient of compacted MX-80 bentonite (nominal dry density of  $1.6 \text{ Mg/m}^3$ ) after clay and model-waters interactions at least 3 temperatures (20 to 95°C).

#### **6.0 Deliverables**



6.1 Start-up Meeting

Date: Within 15 days after contract award

Location: The CNSC Head Office, Ottawa

Purpose: To discuss and clarify the proposed approach, work plan and schedule to ensure achievement of the contract objectives. The contractor shall make a presentation with the above purpose in mind.

6.2 Progress Meetings

Dates: Every 6 months after contract award

Location(s): The CNSC Head Office, Ottawa OR Via Videoconference

Purpose: To assess the degree to which the agreed project objectives are being achieved as planned and thus to facilitate timely adjustments (if necessary) to ensure the project success.

6.3 First Formal Progress Report

Due Date: 1 year after contract award

Copies: One electronic copy via email to the Project Authority

Format and style requirements: As specified in section 6.9

6.4 Second Formal Progress Report

Due Date: 2 years after contract award

Copies: One electronic copy via email to the Project Authority

Format and style requirements: As specified in section 6.9

6.5 Draft Final Report

Due Date: Two months before contract end date or 34 months after contract award

Copies: One electronic copy via email to the Project Authority

Format and style requirements: As specified in section 6.9

6.6 Presentation

Due Date: To be agreed between the parties.

Location: The CNSC Head Office, Ottawa



Purpose: To present the project findings, conclusions and recommendations documented in the Draft Report to the CNSC Commission.

6.7 Final Report

Due Date: Three (3) years after contract award

Copies: One electronic copy via email to the Project Authority

Format & style requirements: As specified in section 6.9

6.8 Abstract

Due Date: Two months before contract end date or 34 months after contract award

Copies: One electronic copy via email to the Project Authority

Format and style requirements: 300 words or less providing a stand-alone statement that conveys the essential information of the final report. The abstract must include the following: a) context; b) purpose/objective of the research; c) approach/scope/method. The abstract must be written in a style that can be widely understood by the general public. The CNSC reserves the right to modify or translate of the abstract into French or English.

6.9 Format of Deliverables

To be specified by the Project Authority. The font Times New Roman 12 is to be used. Electronic copies must be provided in a format readable by Word 2010 with minor formatting changes. Any electronic files that cannot be read or require major formatting changes when opened are not acceptable and may be returned to the contractor for correction. The CNSC reserves the right, at its own discretion, to have the final report printed under CNSC cover, and to distribute it publicly. The final report must include the following CNSC publication identifier on the cover: **RSP-691.7**

## 7.0 Government Furnished Equipment

The CNSC will not provide any equipment or materials. The contractor is responsible for the procurement of all equipment and materials required to carry out the scope of this project.

## 8.0 Constraints

The Principal Investigator must not have conducted research for the Nuclear Waste Management Organization on the properties, behaviour or performance of bentonite.

## 9.0 Language of Work

All deliverables must be delivered in English.

## 10.0 Travel Requirement

The project manager must travel to the CNSC office at 280 Slater Street, Ottawa, ON, twice throughout the duration of this contract. The project manager must attend a start-up meeting and final presentation at the CNSC office. Progress meetings can be held at the CNSC office or via videoconference.

## 11.0 Applicable Documents



## References

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16. A.R. Estabragh, F. Khostavi, and A.A. Javadi, 2016. Effect of thermal history on the properties of bentonite. Environmental Earth Science. Volume 75, Issue 8, Article 657.
17. AMEC, 2014. Review of the current status of work on enhanced bentonite buffer materials. 103726-0008-UA00-TLN-0001 (Issue 2).
18. J. Wilson and A. Bond, 2016. Impact of elevated temperatures on Bentonite buffers. Quintessa report, QRS-1384Q-R3, version 1.2.
19. R. Push, J. Kasbohm, and H.T.M. Thao, 2010. Chemical stability of montmorillonite buffer clay under repository-like conditions - A synthesis of relevant experimental data. Applied Clay Science. Volume 47, Issues 1-2, 113-119.



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## ANNEX B – BASIS OF PAYMENT

### 1.0 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

Milestone No.	Description or "Deliverable"	Due Date	Firm All-inclusive Amount
1	First Formal Progress Report	1 year after contract award	(35% of <a href="#">Total Firm Bid Price</a> )
2	Second Formal Progress Report	2 years after contract award	(35% of <a href="#">Total Firm Bid Price</a> )
3	Draft Final Report	Two months before contract end date or 34 months after contract award	(20% of <a href="#">Total Firm Bid Price</a> )
4	Final Report	3 years after contract award	(10% of <a href="#">Total Firm Bid Price</a> )
<b>Total Firm Price:</b>			
(Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included)			\$ _____
<i>Total Estimated Applicable Taxes:</i>			\$ _____