



RETURN BIDS TO:

Canadian Nuclear Safety Commission (CNSC)

Send by email to: solicitation-demandedesoumission@cnsccsn.gc.ca

Bid solicitation

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 and services listed herein and on any attached sheets at the price(s) set out thereof.

Instructions: See herein

Supplier name and address:

Issuing office: CNSC

THIS DOCUMENT CONTAINS A SECURITY REQUIREMENT

Before submitting a bid, foreign-based bidders must contact the contracting authority no later than 20 calendar days before the bid closing date, to obtain the appropriate international security clauses. Bidders from non-NATO countries or countries who have not signed a bilateral industrial security arrangement with the Canadian International Industrial Security Directorate may not be able to obtain the required security clearance(s) and, as a result, may be ineligible for award of the contract.

Buyandsell.gc.ca/tenders is the official site for the CNSC to meet its trade agreement obligations and the authoritative source for Government of Canada tenders.

Title: The Effect of changing extreme climate events to structural loads of containment structures due to wind, snow, and temperature.	
Solicitation no.: 5000058960	Date: 2022-05-05
File No. – N° de dossier: 5000058960	
Solicitation closes: At 2 p.m. / 14 h 2022-06-14	Time zone: Eastern Daylight Time (EDT)
Address inquiries to: solicitation-demandedesoumission@cnsccsn.gc.ca	
Telephone:	Fax:
Email: solicitation-demandedesoumission@cnsccsn.gc.ca	
Destination: See herein	
Delivery required:	Delivery offered:
Supplier name and address:	
Telephone:	
Fax:	
Name and title of person authorized to sign on behalf of supplier (type or print):	
Signature	Date



Bid Solicitation

For the Provision of

a comprehensive report that the CNSC and the nuclear industry professionals can use as a single source of information on climatic impact on Canadian nuclear power plant concrete structures



TABLE OF CONTENTS

PART 1 – GENERAL INFORMATION

- 1.1 Security Requirement
- 1.2 Statement of Work
- 1.3 Debriefings

PART 2 – BIDDER INSTRUCTIONS

- 2.1 Standard Instructions, Clauses and Conditions
- 2.2 Submission of Bids
- 2.3 Former Public Servant
- 2.4 Enquiries – Bid Solicitation
- 2.5 Applicable Laws

PART 3 – BID PREPARATION INSTRUCTIONS

- 3.1 Bid Preparation Instructions

Attachment 1 to Part 3 (Pricing Schedule)

PART 4 – EVALUATION PROCEDURES AND BASIS OF SELECTION

- 4.1 Evaluation Procedures
- 4.2 Basis of Selection

Attachment 1 to Part 4 (Mandatory Technical Criteria and Point-Rated Technical Criteria)

PART 5 – CERTIFICATIONS

- 5.4 Certifications Required with the Bid



PART 6 – RESULTING CONTRACT CLAUSES

- 6.1 Security Requirement
- 6.2 Statement of Work
- 6.3 Standard Clauses and Conditions
- 6.4 Term of Contract
- 6.5 Authorities
- 6.6 Proactive Disclosure of Contracts with Former Public Servants
- 6.7 Payment
- 6.8 Invoicing Instructions
- 6.9 Certifications
- 6.10 Applicable Laws
- 6.11 Priority of Documents
- 6.14 Dispute Resolution

Annexes:

Annex A – Statement of Work

Annex B – Basis of Payment



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

- a. This bid solicitation is being issued to satisfy the requirement of the Canadian Nuclear Safety Commission (the "**Client**") for research on the effect of changing excrement climate events to structural loads of contain.
- b. It is intended to result in the award of one contract for 2 years.
- c. The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), "the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the "Canadian Free Trade Agreement (CFTA).
- d. This requirement is subject to the COVID-19 Vaccination Policy for Supplier Personnel. Failure to complete and provide the COVID-19 Vaccination Requirement Certification as part of the bid will render the bid non-responsive.

1.3 Debriefings

After a contract is awarded, 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 in writing, by telephone or in person.

1.4 Bid Challenge and Recourse Mechanisms



- a. Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- b. Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's Buy and Sell website, under the heading "Bid Challenge and Recourse Mechanisms" contains information on potential complaint bodies such as:
 - Office of the Procurement Ombudsman (OPO)
 - Canadian International Trade Tribunal (CITT)
- c. Suppliers should note that there are strict deadlines for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

PART 2 – BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions (A0000T – 2012-07-16 – modified)

- 2.1.1 All instructions, clauses and conditions incorporated by reference in the bid solicitation (number, date and title) are set out in the [Standard Acquisition Clauses and Conditions \(SACC\) Manual](http://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by PWGSC. All of the clauses of this document are legally binding on the parties.
- 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.
- 2.1.3 The 2003 (2020-05-28) Standard Instructions – Goods or Services – Competitive Requirements are incorporated by reference into and form part of the bid solicitation.
- 2.1.4 With the exception of sections 1 and 3 of the 2003 (2020-05-28) Standard Instructions – Goods or Services – Competitive Requirements all references to the Minister of Public Works and Government Services should be deleted and replaced with the President of the Canadian Nuclear Safety Commission (CNSC). Also all reference to the Department of Public Works and Government Services should be deleted and replaced with the Canadian Nuclear Safety Commission.
- 2.1.5 Standard Instructions [2003](#) (2020-05-28), Goods or Services - Competitive Requirements, are further modified with the following:
 - a. Section 5-Submission of Bids, Subsection 4, is amended as follows:

Delete: sixty (60) days

Insert: 180 consecutive days
 - b. Section 6- Late Bids, is amended as follows:

Delete: The content in its entirety.

Insert: For bids submitted electronically, the late bids will be deleted. Records will be kept documenting the transaction history of late bids submitted.



c. Section 7 Delayed Bids, Subsection 1 and Subsection 3, are amended as follows:

Delete: The Subsections in their entirety.

d. Section 8 Transmission by Facsimile or by epost Connect, is amended as follows:

Delete: The Section in its entirety.

e. Section 18 Conflict of Interest Unfair Advantage, is amended as follows:

Insert:

4. The Canadian Nuclear safety Commission (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, bids to review previous work contributed by the bidder on behalf of a CNSC licensee, and bids to make recommendations affecting the CNSC licensing decisions in which the bidder has a financial or non financial interest may be rejected.

5. 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.

f. Section 20- Further Information, Subsection 2, is amended as follows:

Delete: The Subsection in its entirety.

All other provisions remain in effect. If there is a conflict between the provisions of Standard Instructions [2003](#) (2020-05-28), Goods or Services - Competitive Requirements, and this document, this document prevails.

2.2 Submission of Bids

- a. Bids must be submitted only to CNSC e-mail address: solicitation-demandedesoumission@cnsccsn.gc.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. 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 Ontario.

Note to Bidders: 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 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, Bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favor a particular Bidder will be given consideration provided they are submitted to the Contracting Authority at least 10 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

2.7 Maximum Funding

The maximum funding available for a contract resulting from the bid solicitation is **\$250,000.00** (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](#).
- 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 [2.7 MAXIMUM 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.

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.



ATTACHMENT 1 TO PART 3 – PRICING SCHEDULE

The Bidder should complete this pricing schedule and include it in its financial bid. As a minimum, the Bidder must respond to this pricing schedule by inserting in its financial bid for each milestone specified below its quoted firm all-inclusive firm price (in Cdn \$).

	A	B	C
	Milestone	Delivery date	Firm price
1	Start Up Meeting		\$
2	Progress Report 1 & Progress Meting		\$
3	Progress Report 2 &Progress Meting		\$
4	Progress Report 3 & Progress Meting		\$
5	Draft Final Report		\$
6	Presentation		\$
7	Final Report & Publications		\$
	<p>Total Firm Bid Price (Canadian dollars, with Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included)*:</p> <p>* This amount will be used as the bid evaluated price as per 4.2.1 Basis of Selection – Highest Combined Rating of Technical Merit (70%) and Price (30 %).</p> <p>Cannot exceed overall maximum funding of \$250,000.00 (Canadian dollars, applicable taxes extra) as specified in clause 2.6 MAXIMUM FUNDING .</p>		C1+C2+C3+C4+C5+C6+C7
		Applicable Taxes	
		Total	



PART 4 – EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation, including the technical and financial evaluation criteria.
- (b) An evaluation team composed of CNSC representatives will evaluate the bids.

4.1.1 Technical Evaluation

a) 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

Refer to 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

Basis of Selection – Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation;
 - b. obtain the required minimum points for the technical evaluation criteria which are subject to point rating; and
 - c. obtain the required minimum of 100 points overall for the technical evaluation criteria which are subject to point rating.
The rating is performed on a scale of 142 points.
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70% the technical merit and 30% for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows:
total number of points obtained / maximum number of points available multiplied by the ratio of 70%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30%.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.
8. 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 2 to Part 4 will be recommended for award of a contract.



The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of selection – Highest combined rating technical merit (70%) and price (30%)

		Bidder 1	Bidder 2	Bidder 3
Overall technical score		115/135	89/135	92/135
Bid evaluated price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical merit score	$115/135 \times 70 = 59.63$	$89/135 \times 70 = 46.15$	$92/135 \times 70 = 47.70$
	Pricing score	$45/55 \times 30 = 24.54$	$45/50 \times 30 = 27.00$	$45/45 \times 30 = 30.00$
Combined rating		84.17	73.15	77.70
overall rating		1st	3rd	2nd



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: 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	142
Overall Minimum Points Required	100

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.

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.



POINT-RATED CRITERIA	SCORING	BID PREPARATION INSTRUCTIONS
<p>R1. Approach to Work</p> <p>Bidders should propose an approach for conducting the Work outlined in Annex A, Statement of Work.</p>	<p><u>Ten (10) Points Maximum</u></p> <p>1. Schedule</p> <p>Zero (0) Points: Project schedule is not provided or the details provided are irrelevant to meet the requirements of the statement of work.</p> <p>Two (2) Point: Project schedule is provided with some of the elements required and meets the requirements of the statement of work.</p> <p>Four (4) Points: Project schedule is provided with all of the elements required and meets the requirements of the statement of work.</p> <p>2. Resources</p> <p>Zero (0) Points: Resource allocation is not provided or is irrelevant to meet the requirements of the statement of work.</p> <p>One (1) Point: Resource allocation is provided with some of the elements required and meets the requirements of the statement of work.</p> <p>Three (3) Points: Resource allocation is provided with all of the elements required and meets the requirements of the statement of work.</p> <p>3. Risks</p> <p>Zero (0) Points: Risks are not provided or are irrelevant to the requirements of the statement of work.</p>	<p>The following items should be included in the Bidder's response:</p> <ol style="list-style-type: none"> 1. Project schedule, including the following elements: <ol style="list-style-type: none"> a. key milestones, for each task and deliverable outlined in Annex A, Statement of Work. b. associated start and end dates for each task and deliverable. c. dependency of each tasks and deliverable where applicable; 2. Resource allocation, including the following elements: <ol style="list-style-type: none"> a. For each task and deliverable, the name(s) of the individual and their role on the project team. b. An overall team structure breakdown with a reporting structure; 3. Any risks that could impact the work schedule and how they would be mitigated 4. CVs of individuals on the research team



	<p>One (1) Point: Risks and mitigation measures proposed are somewhat appropriate for the requirements of the statement of work.</p> <p>Three (3) Points: Risks and mitigation measures proposed are completely appropriate for the requirements of the statement of work.</p>	
<p>R2. Research Experience of Lead Researcher</p> <p>The Bidder should demonstrate that the proposed Lead Researcher has experience undertaking structural engineering projects.</p>	<p><u>Thirty (30) Points Maximum</u></p> <p>Zero (0) Points: No experience</p> <p>Ten (10) Points: Less than 5 years</p> <p>Twenty (20) Points: 5 years to less than 10 years</p> <p>Thirty (30) Points: 10 years or more</p>	<p>To score points, the Bidder must provide the following information for each research project with their bid:</p> <ul style="list-style-type: none"> g. Project Title a. Start and end date that resource worked on project (if end date applies) (dates must include month and year) b. Description of the project objective c. Detailed information that describes, explains, or illustrates through examples the specific work and tasks performed by the proposed resource, specific to the identified project that clearly demonstrates how the resource meets and complies with the required experience identified in the criterion. High level or generic tasks or simply repeating the statement contained in the bid solicitation without supporting detail is not sufficient and does not demonstrate compliance.
<p>R3. Experience in identifying Nuclear Power Plant Structure literature</p> <p>The Bidder should identify the proposed resources (included subcontractors) and demonstrate that one (1) resource from the project team has relevant past experience in identifying relevant literature on climate variables and its impact on nuclear power plant structures within the last twenty years of the bid solicitation closing date.</p>	<p><u>Thirty (30) Points Maximum</u></p> <p>Zero (0) Points: No experience</p> <p>Ten (10) Points: Less than 5 years</p> <p>Twenty (20) Points: 5 years to less than 10 years</p> <p>Thirty (30) Points: 10 years or more</p>	<p>For each referenced project, the Bidder must include the following information in their response:</p> <ul style="list-style-type: none"> • Client Organization Name for which the work was performed; <p>Project Description identifying the overall purpose or intended outcome(s) of the project</p> <ul style="list-style-type: none"> • Duration of Time proposed resource Worked on Project (start and end date); • The role or overall responsibility of the proposed resource on the project; and



		<ul style="list-style-type: none"> Detailed information that describes, explains, or illustrates through examples the specific work and tasks performed by the proposed resource, specific to the identified project that clearly demonstrates how the resource meets and complies with the required experience identified in the criterion. High level or generic tasks or simply repeating the statement contained in the bid solicitation without supporting detail is not sufficient and does not demonstrate compliance.
<p>R4. Experience in Critical review of climate variables and impact on Nuclear Power Plant structure</p> <p>The bidder should identify the proposed resources (included subcontractors) and demonstrate that one (1) resource from the project team has relevant past experience in making critical review of climate variables and its impact on nuclear power plant structures. Their curriculum vitae must also be included</p>	<p><u>Thirty (30) Points Maximum</u></p> <p>Zero (0) Points: No experience</p> <p>Ten (10) Points: Less than 5 years</p> <p>Twenty (20) Points: 5 years to less than 10 years</p> <p>Thirty (30) Points: 10 years or more</p>	<p>For each referenced project, the Bidder must include the following information in their response:</p> <ul style="list-style-type: none"> Client Organization Name for which the work was performed; <p>Project Description identifying the overall purpose or intended outcome(s) of the project</p> <ul style="list-style-type: none"> Duration of Time proposed resource Worked on Project (start and end date). The role or overall responsibility of the proposed resource on the project; and Detailed information that describes, explains, or illustrates through examples the specific work and tasks performed by the proposed resource, specific to the identified project that clearly demonstrates how the resource meets and complies with the required experience identified in the criterion. High level or generic tasks or simply repeating the statement contained in the bid solicitation without supporting detail is not sufficient and does not demonstrate compliance.
<p>R5. Experience in identifying knowledge gaps and projecting future impacts on nuclear power structures</p> <p>The bidder should identify the proposed resources (included subcontractors) and demonstrate that one (1) resource from the project team has relevant past experience in identifying knowledge gaps and projecting future impacts on nuclear power plant structures. Their curriculum vitae must also be included</p>	<p><u>Thirty (30) Points Maximum</u></p> <p>Zero (0) Points: No experience</p> <p>Ten (10) Points: Less than 5 years</p> <p>Twenty (20) Points: 5 years to less than 10 years</p>	<p>For each referenced project, the Bidder must include the following information in their response:</p> <ul style="list-style-type: none"> Client Organization Name for which the work was performed; <p>Project Description identifying the overall purpose or intended outcome(s) of the project</p> <ul style="list-style-type: none"> Duration of Time proposed resource Worked on Project (start and end date);



	<p>Thirty (30) Points: 10 years or more</p>	<ul style="list-style-type: none"> The role or overall responsibility of the proposed resource on the project; and Detailed information that describes, explains, or illustrates through examples the specific work and tasks performed by the proposed resource, specific to the identified project that clearly demonstrates how the resource meets and complies with the required experience identified in the criterion. High level or generic tasks or simply repeating the statement contained in the bid solicitation without supporting detail is not sufficient and does not demonstrate compliance.
<p>R6. Regulatory Framework Experience</p> <p>The Bidder should demonstrate that one (1) resource from the project team has experience providing advice to regulatory bodies, including identifying realistic challenges (e.g. advice to a nuclear regulator) and has experience with CSA N287.7, <i>In-Service Examination and Testing Requirements for CANDU Nuclear Power Plants</i> or similar standards.</p>	<p><u>Thirty (12) Points Maximum</u></p> <p><u>Zero (0) Points:</u> <u>No experience</u></p> <p><u>Ten (4) Points:</u> <u>Less than 5 years</u></p> <p><u>Twenty (8) Points:</u> <u>5 years to less than 10 years</u></p> <p><u>Thirty (12) Points:</u> <u>10 years or more</u></p>	<p>For each referenced project, the Bidder must include the following information in their response:</p> <ul style="list-style-type: none"> Client Organization Name for which the work was performed; Project Description identifying the overall purpose or intended outcome(s) of the project; Duration of Time proposed resource Worked on Project (start and end date); The role or overall responsibility of the proposed resource on the project; and Detailed information that describes, explains, or illustrates through examples the specific work and tasks performed by the proposed resource, specific to the identified project that clearly demonstrates how the resource meets and complies with the required experience identified in the criterion. High level or generic tasks or simply repeating the statement contained in the bid solicitation without supporting detail is not sufficient and does not demonstrate compliance.
Total Available Points	<u>/142</u>	
Minimum Pass Mark	100	



PART 5 – CERTIFICATIONS

- 5.1** Bidders must provide the required certifications and associated information to be awarded a contract.
- 5.2** The certifications provided by the bidders to the CNSC are subject to verification by CNSC at all times. CNSC will declare a bid non-responsive or will declare a contractor in default in carrying out any of its obligations under the Contract, 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.
- 5.3** The Contracting Authority will have the right to ask for additional information to verify bidders' certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

5.4 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/ciif/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ciif/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.5 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 List" available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-socialdevelopment/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-socialdevelopment/programs/employment-equity/federal-contractor-program.html#>).

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 List" at the time of contract award

5.5.1 Status and Availability of Resources (A3005T – 2010-08-16)

1. 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 the CNSC representatives and at the time specified in the bid solicitation or agreed to with the CNSC. 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.
2. 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 the CNSC. 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.

5.4.2 Education and Experience (A3010T – 2010-08-16)



1. 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.
2. 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.

5.5 Mandatory Certifications Precedent to Contract Award

The certifications listed below *should be completed and submitted with the bid but may be submitted afterwards*. If any of these required certifications is not completed and submitted as requested, the contracting authority will so inform the bidder and provide the bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

5.6 Former Public Servant – Competitive Bid

5.7.1 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 information required below 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, CNSC will inform the Bidder of a time frame within which to provide the information. Failure to comply with CNSC's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

5.6.2 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, in the context of the fee abatement formula, a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S.C, 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.C, 1985, c. C-17, the [Defence Services Pension Continuation Act](#), R.S.C. 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.C, 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S.C, 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S.C, 1985, c. C-8.

Former public servant in receipt of a pension



- Is the bidder a FPS in receipt of a pension as defined above? **Yes () No ()**
- Is the bidder or the bidder's employee a former CNSC/AECB (Atomic Energy Control Board) employee? **Yes () No ()**

If so, the bidder must provide the following information:

- name of former public servant
- 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](#).

Workforce Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a Work Force Adjustment Directive? **Yes () No ()**

If so, the bidder must provide the following information:

- name of former public servant;
- conditions of the lump sum payment incentive;
- date of termination of employment;
- amount of lump sum payment;
- rate of pay on which lump sum payment is based;
- period of lump sum payment including start date, end date and number of weeks;
- number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment 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.

5.7 COVID-19 Certification

In accordance with the COVID-19 Vaccination Policy for Supplier Personnel, all Bidders must provide, prior to contract award, the COVID-19 Vaccination Requirement Certification in Attachment 2 to Part 5 to be given further consideration in this procurement process. This Certification incorporated into the bid solicitation on its closing date is incorporated into, and forms a binding part of any resulting Contract.

Name of Supplier's Authorized Signature

Signature of Supplier's Authorized Signatory

Date



ATTACHMENT 1 TO PART 5 - RESOURCE CONSENT FORM

I, _____, (*insert resource name*) herein certify that I am aware, have reviewed the responses to the technical criteria and confirm the information is accurate and I have given consent to _____ (*insert Company's name*), to submit my name in response to the Bid solicitation no. 5000058960 for research on The Effect of changing extreme climate events to structural loads of contain.

Signature

Date



ATTACHMENT 2 TO PART 5 - COVID-19 VACCINATION REQUIREMENT CERTIFICATION

I, _____ (first and last name), as the representative of _____ (name of business) pursuant to _____ (insert solicitation number), warrant and certify that all personnel that _____ (name of business) will provide on the resulting Contract who access federal government workplaces where they may come into contact with public servants will be:

- (a) fully vaccinated against COVID-19 with Health Canada-approved COVID-19 vaccine(s); or
(b) for personnel that are unable to be vaccinated due to a certified medical contraindication, religion or other prohibited grounds of discrimination under the Canadian Human Rights Act, subject to accommodation and mitigation measures that have been presented to and approved by Canada; until such time that Canada indicates that the vaccination requirements of the COVID-19 Vaccination Policy for Supplier Personnel are no longer in effect.

I certify that all personnel provided by _____ (name of business) have been notified of the vaccination requirements of the Government of Canada's COVID-19 Vaccination Policy for Supplier Personnel, and that the _____ (name of business) has certified to their compliance with this requirement.

I certify that the information provided is true as of the date indicated below and will continue to be true for the duration of the Contract. I understand that the certifications provided to Canada are subject to verification at all times. I also understand that Canada will declare a contractor in default, if a certification is found to be untrue, whether made knowingly or unknowingly, during the bid or contract period. Canada reserves the right to ask for additional information to verify the certifications. Failure to comply with any request or requirement imposed by Canada will constitute a default under the Contract.

Signature: _____
Date: _____

Information you provide on this Certification Form and in accordance with the Government of Canada's COVID-19 Vaccination Policy for Supplier Personnel will be protected, used, stored and disclosed in accordance with the Privacy Act. Please note that you have a right to access and correct any information on your file, and you have a right to file a complaint with the Office of the Privacy Commissioner regarding the handling of your personal information. These rights also apply to all individuals who are deemed to be personnel for the purpose for the Contract and who require access to federal government workplaces where they may come into contact with public servants.



PART 6 – RESULTING CONTRACT CLAUSES

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

6.1 Security Requirement

There is no security requirement associated with the requirement.

6.2 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 _____.

6.3 Standard Clauses and Conditions (A0000C – 2012-07-16 – modified)

6.3.1 All clauses and conditions incorporated by reference in the contract (number, date and title) are set out in the [*Standard Acquisition Clauses and Conditions \(SACC\) Manual*](#) (buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada. All of the clauses of this document are legally binding on the parties. The following changes are made:

6.3.3 General Conditions

2010B (2021-12-02), General Conditions – Professional Services (Medium Complexity) apply to and form part of the contract. The following change is made:

- a) Replace section 27 with the following:
- 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.
 - i. 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*.
 - ii. 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>

6.3.4 Supplemental General Conditions - Compliance with on-site measures, standing orders, policies, and Rules

The Contractor must comply and ensure that its employees and subcontractors comply with all security measures,



standing orders, policies, or other rules in force at the site where the Work is performed.

6.4 Term of Contract

6.4.1 Period of the Contract (A9022C – 2007-05-25)

The period of the contract is twenty-four months from the date of Contract (*dates to be inserted at contract award*).

6.5 Authorities

6.5.1 Contracting Authority

The contracting authority for the contract is:

Name: Jessica Brutus
Title: Contracting Specialist
Canadian Nuclear Safety Commission
Corporate Services Branch
P.O. Box 1046, Station B
280 Slater Street
Ottawa, Ontario K1P 5S9
Canada

Telephone: 343-550-6808
Fax: 613-995-5086
Email: jessica.brutus@cnsccsn.gc.ca

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:
Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
280 Slater Street
Ottawa, Ontario K1P 5S9
Canada

Telephone:
Fax: 613-995-5086
Email:

The project authority is the representative of the CNSC 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 Contractor's Representative

(To be identified at contract award)

Name:

Title:

Telephone:

Fax:

Email:

6.6 Proactive Disclosure of Contracts with Former Public Servants (A3025C – 2013-03-21)

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#), R.C.S. 1985, c. P-36 pension, the contractor has agreed that this information will be reported on departmental Web sites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2019-01](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

6.7 Payment

6.7.1 Basis of Payment

For the satisfactory performance of the contract, the contractor shall be paid in accordance with the basis of payment, which is found in Annex B attached to this contract.

6.7.2 Method of Payment – Milestones Payments

Payment will be made in accordance with the schedule of milestones out in Annex B attached to this contract.

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.

6.8 Invoicing Instructions

- a. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" in the General Conditions.
- b. submitted electronically at: finance@cnsccsn.gc.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 Instructions to Bidders/Contractors

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing associated information are conditions of the Contract. Certifications are subject to verification by the CNSC during the entire period of the Contract. If the contractor does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, the CNSC has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.9.2 SACC Manual Clauses

- [A9014C \(2006-06-16\) – Specific Person\(s\)](#)
- [G1005C \(2006-01-28\) - Insurance](#)
- [A7017C \(2008-05-12\) – Replacement of Specific Individuals](#)
- [A2000C \(2006-06-16\) - Foreign Nationals \(Canadian Contractor\)](#)

6.10 Applicable Laws

The contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

6.11 Priority of Documents

The following documents form part of the legally binding agreement between the parties. If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement, including any individual SACC clauses incorporated by reference in these Articles of Agreement
- (b) Supplemental general conditions under section 6.4.3 (section number may be revised at contract award)
- (c) the General Conditions 2010B (2021-12-02)– General Conditions – Professional Services (Medium Complexity)
- (d) Annex A – Statement of Work
- (e) Annex B – Basis of Payment
- (f) the contractor's bid dated (*insert date of bid*)

6.14 Third-Party Information

6.14.1 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.

6.14.2 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.



6.14.3. 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 agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
2. The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
3. If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
4. Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".

6.16. Contract Administration

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 review a complaint filed by the complainant respecting the administration of the 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. To file a complaint, the Office of the Procurement Ombudsman may be contacted by e-mail at boa.opo@boa-opo.gc.ca, by telephone at 1-866-734-5169, or by web at www.opo-boa.gc.ca.

6.17. No Responsibility to Pay for Work not performed due to Closure of Government Offices or Network Outages

- a. If applicable, where the Contractor, its employees, subcontractors, or agents are providing services on government premises under the Contract and those premises are inaccessible because of the evacuation or closure of government offices, and as a result no work is performed, Canada is not responsible for paying the Contractor for work that otherwise would have been performed if there had been no evacuation or closure.
- b. If, as a result of any strike, lock-out or network outage, the Contractor or its employees, subcontractors or agents cannot obtain access to government premises or its network and, as a result, no work is performed, Canada is not responsible for paying the Contractor for work that otherwise would have been performed if the Contractor had been able to gain access to the premises or network.



ANNEX A – STATEMENT OF WORK

1.0 TITLE

The Effect of changing extreme climate events to structural loads of containment structures due to wind, snow, and temperature.

2.0 OBJECTIVE OF THE CONTRACT

The research contract's objective is to perform an assessment of projected climate variables for the next 50 years and provide a critical review of the impact on existing nuclear power plant concrete structures that are 30 to 40 years old.

3.0 BACKGROUND

Climate change is a global phenomenon, and Canada's national climate change assessments project the changes to continue for some time. Understanding the impact these changes have on the reinforced concrete containment structures is necessary to help inform mitigation decision-making. The main climate variables that interfere with the concrete degradation mechanisms are temperature, relative humidity, precipitation, wind, waves, and tides. An example of the effects of climate change on structures is the carbonation-induced corrosion of reinforcements. Many of these processes are closely related to the climate variables of the external environment. Long-term cumulative effect of these processes can reduce the service life of concrete structures, impair safety, and cause an economic penalty.

There are 16 safety and control areas (SCA) on which CNSC regulates nuclear power plants. Among them, the "Physical Design" SCA covers activities such as design, fabrication, installation, modification, repair, replacement, examination, and testing of structures, systems, and components (SSCs) in nuclear facilities. CNSC staff review the physical design of SSCs and any design modification to verify that the design complies with the applicable codes, standards, and regulations. The Physical Design SCA includes a comprehensive design program implemented and maintained by each nuclear power plant licensee. Among them, civil structures are essential to safety and security. Any modifications to them must continue to meet their design bases, given new information that arises over time and changes to the structure's external environment. From a Physical Design perspective, the concrete containment is required to maintain its leak tightness during the nuclear power plant's operational life. It is expected to prevent the uncontrolled release of radioactivity to the environment for all postulated design basis accident conditions.

The structure is also expected to accommodate the calculated pressure and temperature conditions resulting from a loss-of-coolant accident. Periodic integrated leak-rate testing at the peak calculated accident pressure is performed to ensure the leak tightness. An appropriate periodic inspection of all critical components and surfaces is performed to ensure the structure is within the design specification during the operational life.

CNSC wants to assess how the emerging climate change trends are likely to impact structural integrity and leak tightness of the concrete containment structures. Civil engineering structures are inevitably exposed to various impacts of climate change when adverse changes in frequency, magnitude, scope, and scale of consequences occur. All of these can directly influence the safety, durability, and reliability of engineering structures. There have been situations where the weather event's average condition has been exceeded significantly, leading it to be called 'extreme climate' within a period successively.

The durability of concrete is defined as the resistance to deteriorating influences. Inadvertent acts or ignorance may diminish durability. When exposed to adverse environments, the concrete's internal conditions become exposed to the outside conditions over time. The degradation mechanisms on concrete structures are generally divided into two groups; one that debilitates concrete and steel reinforcement. The other affects the graded aggregate in the concrete and the cement inside a block of concrete. In addition, the directional orientation of the structure facing the south is likely to pose a differential degradation rate of concrete with respect to the surface facing the north. In freeze-thaw events, combined with climate change on concrete structures, the climatic induced stress levels are likely to change overtime potentially exceeding design assumptions for outdoor concrete structures, depending on the structure's orientation.

Canadian weather conditions are very aggressive for concrete structures. One of the most severe issues concerns freeze-thaw cycles and it is more severe when the ambient conditions are wet. This situation is common in Canada



during autumn, spring, and warm winter when the daytime temperature is slightly above 0 °C and by night below zero. Often, investments for repair and maintenance are required when a concrete structure's durability is compromised, resulting in high costs for the nuclear power plant. The knowledge about the environmental variables' performance in the degradation mechanisms needs constant updating, mainly due to climatic changes.

Global average temperature and atmospheric water vapor content have increased over the past sixty years. There has been an increase in the frequency of severe weather patterns and the cold and warm extremes of temperature. Data indicates warm days and nights have increased, and the number of cold days and nights has likely decreased over the last sixty years. In North America, more regions have experienced increases in heatwaves and warm spells than have experienced decreases. As climate warming has made more moisture available in the atmosphere, this additional atmospheric moisture can increase extreme precipitation events. A trend toward heavier precipitation events since the 1950s has been observed. Annual and seasonal mean temperatures across Canada have increased, with the most significant warming occurring in winter. Along with the changes in temperature and precipitation, the combined temperature and precipitation changes can have other impacts. The concurrent changes in these two variables will affect nuclear power plant concrete structures.

Climate changes are any changes in weather over time that remain for a long time. It is expected that a changing climate will impact several of the factors affecting future climate. These include precipitation amount, type, and intensity; the amount and duration of snow cover; the wind velocity and tornadoes, and the potential for rain-on-snow events. Climate scientists are confident that Canada's climate has warmed. These changes are projected to continue in the future, with the magnitude of change proportional to the mean temperature change. Several sources of data and studies illustrate the level of climate change that has already occurred in the past 40 years. There are reliable studies available for projected climatic conditions for the next 50 years in Southern Ontario and New Brunswick.

4.0 SCOPE OF WORK

The scope of the research project is producing a comprehensive report that the CNSC and the nuclear industry professionals can use as a single source of information on climatic impact on Canadian nuclear power plant concrete structures.

A significant amount of information is available on the changes occurring to the Canadian climate. There are also projections made on the climate for the next 50 years or so. CNSC is interested in assessing the impact of climatic variables on concrete as it ages and the changes to its properties that occur due to continuing microstructural changes (e.g., slow hydration, crystallization of amorphous constituents, and reactions between cement paste and aggregates), as well as environmental influences. CNSC's interest is determining whether these have any detrimental effect on concrete (including reinforced concrete) to the point that it will not meet its functional and performance requirements.

The following steps define the scope:

- a) An analysis of climate changes in the past 40 years to answer what has happened thus far.
- b) The best estimate projection of changes expected in the next 50 years to answer how would climate change.
- c) A literature review of the effect climate variables has on reinforced concrete containment structures of nuclear power plants. This review will include the available operational experience, emphasizing the effect of these changes on leak-tightness and structural integrity to answer what impact climatic variables would have on concrete.
- d) Forecasting what is likely to happen to concrete containment structures based on projected climate variables to answer the question of what could potentially happen if climate changes as predicted.
- e) Document all the analysis and results in sufficient detail in a comprehensive document.

5.0 RESOURCE REQUIREMENT

The work must be completed within two years using one full-time equivalent of expert(s) familiar with climate science and structural, civil engineering with specific knowledge on concrete degradation mechanisms and structural impairments.



6.0 TASKS

The Contractor must undertake the following tasks to achieve the objective:

- 1.1 Identify, assemble, and review relevant reports, data, and information on Canada's national climate change assessments and projections specifically in regions with nuclear power plants. Identify the main climate variables that interfere with the concrete degradation mechanisms, such as, but not limited to, temperature, relative humidity, precipitation, wind, waves, and tides. Make projections for these variables over the next 50 years with justifications.
- 1.2 Identify, assemble, and review relevant reports, data, and information to improve understanding of the impact climatic variables have on the reinforced concrete containment structures based on available literature and Operating Experience (OPEX). Make a critical review of the assembled literature and identify the most influential to least influential variables for nuclear safety (i.e., leak tightness and structural integrity) and mitigation decision-making.
- 1.3 Perform a critical synthesis of projected climate data and potential adverse effects of degradation mechanisms, identifying gaps in knowledge requiring further research. Justify the rationale for selecting the knowledge gaps. Rank the identified knowledge gaps from most important to least important. Based on the analysis results completed in the previous two tasks, make projections on how the existing 30- to 40-year-old containment structures are likely to behave in the next 50 years. This projection must include new build structures. Recommend concepts or best practices with the justification that can be applied to mitigate concrete structural deterioration.
- 1.4 Assemble all of the information and produce a state-of-the-art report on the impact climate change has on concrete containment structures of nuclear power plants in Canada. The report is expected to be a repository of all relevant information for CNSC staff and industry professionals for their future assessments of concrete containments.
- 1.5 Deliver a workshop to present the results to CNSC staff and the general public.

7.0 DELIVERABLES AND ASSOCIATED SCHEDULE

- 1.6 Start-up Meeting

Date: Within 14 days following award of the contract.
Location: The CNSC Head Office, Ottawa or via Tele/Videoconference should the current pandemic restrictions continue and does not allow for in-person presentation as determined by responsible CNSC staff.
Purpose: To discuss and clarify the proposed approach, work plan and schedule to ensure achievement of the contract objectives. The Contractor must make a presentation with the above purpose in mind.
- 1.7 Progress Meetings

Dates: Progress Meetings will occur after each submission of Progress Reports (dates below).
Location(s): The CNSC Head Office, Ottawa or via Tele/Videoconference should the current pandemic restrictions continue and does not allow for in-person presentation.
Purpose: To present, discuss and 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. Progress meetings should be followed by email correspondence (MoM) summarizing the status of the project activities and agreements made during the progress meetings.
- 1.8 Progress Report 1

The Contractor must deliver Progress Report 1, which addresses the work performed on Task 6.1. The report must also include the following:
 - a) An executive summary that includes preliminary conclusions and recommendations,
 - b) A table of contents, and



- c) A brief summary of review findings up to that point.
Due Date: 6 months following Start-up Meeting
Copies: One electronic copy via email to the Project Authority.
Format and style requirements: The progress reports must follow the requirements set out for the Final Report except a version readable by Adobe Acrobat Reader DC is not required.
- 1.9 Progress Report 2
The Contractor must deliver Progress Report 2, which addresses the work performed on Task 6.2. The report must also include the following:
 - a) An executive summary that includes preliminary conclusions and recommendations,
 - b) A table of contents, and
 - c) A brief summary of review findings up to that point.Due Date: 12 months following Start-up Meeting
Copies: One electronic copy via email to the Project Authority.
Format and style requirements: The progress reports should follow the requirements set out for the Final Report except a version readable by Adobe Acrobat Reader DC is not required.
- 1.10 Progress Report 3
The Contractor must deliver Progress Report 3 which addresses the work performed on Task 6.3. The report must also include the following:
 - a) An executive summary that includes preliminary conclusions and recommendations,
 - b) A table of contents, and
 - c) A brief summary of review findings up to that point.Due Date: 18 months following the Start-up Meeting
Copies: One electronic copy via email to the Project Authority.
Format and style requirements: The progress reports should follow the requirements set out for the Final Report except a version readable by Adobe Acrobat Reader DC is not required.
- 1.11 Draft Final Report
The Contractor must deliver the Draft Final Report, which addresses the work performed on Task 6.4. The report must also include the following:
 - a) An executive summary that includes preliminary conclusions and recommendations,
 - b) A table of contents, and
 - c) A brief summary of review findings up to that point.Due Date: 21 months following the Start-up Meeting.
Copies: One electronic copy via email to the Project Authority.
Format and style requirements: The Final Report should follow the requirements set out except a version readable by Adobe Acrobat Reader DC is not required.
- 1.12 Presentation
The Contractor must deliver a Presentation, which addresses the work performed in Task 6.5.
Due Date: 1 month after acceptance of Draft Final Report, but no more than 23 months following award of the contract.
Location: The CNSC Head Office, Ottawa or via Tele/Videoconference should the current pandemic restrictions continue and does not allow for in-person presentation as determined by responsible CNSC staff.
Purpose: The Contractor must present the project findings, conclusions and recommendations documented in the Draft Report to CNSC staff and interested industry stakeholders.
- 1.13 Final Report
The Contractor must deliver the Final Report, which addresses the work performed on Task 6.4.
Due Date: 2 weeks after the Presentation, but no more than 23 months following award of the contract.



Copies: One electronic copy via email to the Project Authority.
Format and style requirements: The Final Report should follow the requirements set out except a version readable by Adobe Acrobat Reader DC is not required.

1.14 Publications

Prepare at least two paper publications to present the results from the research. At least one publication must be a refereed publication (e.g. journal).
Due Date for submission of papers: Same as of Draft Final Report.
Copies: One electronic copy of the draft papers via email to the Project Authority.

Table 1. Summary of Deliverables and Associated Schedule

Deliverable	Associated Schedule
Start-up Meeting	Within 14 days following award of the contract
Progress Report 1 & Progress Meeting	6 months following Start-up Meeting
Progress Report 2 & Progress Meeting	12 months following Start-up Meeting
Progress Report 3 & Progress Meeting	18 months following Start-up Meeting
Draft Final Report	21 months following the Start-up Meeting
Presentation	1 month after acceptance of Draft Final Report, but no more than 23 months following award of the contract.
Final Report	2 weeks after the Presentation, but no more than 23 months following award of the contract.
Publications	Same as of Draft Final Report

8.0 Format of Deliverables:

The Contractor must provide the deliverables in the following formats:

- Electronic;
- Using font Times New Roman 12;
- MS Office 2010 or later (Word, Project, PowerPoint, Excel, Visio); and PDF format.

Any electronic files that cannot be read or require major formatting changes when opened are not acceptable and will be returned to the Contractor for correction at their expense.

The CNSC reserves the right to distribute the final report publicly at its discretion. CNSC publication number(s) will be provided by the CNSC.

9.0 LANGUAGE OF WORK

The language of the proposed facilitated meeting will be English.

10.0 APPLICABLE DOCUMENTS



Sample References:

- 1) Advancing our Knowledge for Action, Canada's Changing Climate Report, Natural Resources Canada: <https://www.nrcan.gc.ca/environment/impacts-adaptation/19918>
- 2) REGDOC-2.1.1 Management System
- 3) REGDOC-2.5.2 Design of Reactor facilities

Technical Environment:

The Contractor must have at their disposal software to perform the work envisaged in this research project, namely software for: statistical data processing, climate data processing and general mathematical capabilities; structural analysis of building structures, including chemical and physical interaction with concrete structures.

11.0 LOCATION OF WORK

The Contractor must complete all work at the Contractor's location.

12.0 TRAVEL REQUIREMENTS

Travel by Contractor:

- The Contractor may be required to attend meetings at CNSC Head Office, Ottawa. Should pandemic restrictions not allow for in-person meetings, meetings will be held via Tele/Videoconference. Refer to 7.0 Deliverables and Associated Schedule
- One (1) one-day workshop (Task 6.5) at CNSC Head Office, Ottawa (or via Tele/Videoconference should pandemic restrictions not allow for in-person presentation).



ANNEX B – BASIS OF PAYMENT

1.0 Basis of Payment – Firm Price – Milestones

1.1 Milestone Schedule

In consideration of the contractor satisfactorily completing all of its obligations under the contract, the contractor will be paid the following firm all-inclusive price in accordance with the following milestone schedule. FOB destination, Customs duties are included, and Applicable Taxes are extra.

Milestone	Delivery date	Firm price
Start Up Meeting		\$
Progress Report 1 & Progress Meting		\$
Progress Report 2 & Progress Meting		\$
Progress Report 3 & Progress Meting		\$
Draft Final Report		\$
Presentation		\$
Final Report & Publications		
		\$
	Total firm price	\$
	Applicable Taxes	
	Total (incl. taxes)	