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**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

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.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

<b>Title - Sujet</b> Vérif/entretien groupe électrogènes Inspection/maintenance generator sets and petroleum product storage systems	
<b>Solicitation No. - N° de l'invitation</b> EE517-221143/A	<b>Date</b> 2022-02-09
<b>Client Reference No. - N° de référence du client</b> R.001985.099	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$QCM-040-18290	
<b>File No. - N° de dossier</b> QCM-1-44085 (040)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> Eastern Daylight Saving Time EDT <b>on - le 2022-03-24</b> Heure Avancée de l'Est HAE	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Roy-Lippé, Maude	<b>Buyer Id - Id de l'acheteur</b> qcm040
<b>Telephone No. - N° de téléphone</b> (418) 906-6865 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> MINISTERE DES TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA 1550 D'ESTIMAUVILLE ESC 1 - MPO/Transport CST 1 - DFO/TC QUEBEC Québec G1J0C7 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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**Issuing Office - Bureau de distribution**

TPSGC-PWGSC  
601-1550, Avenue d'Estimauville  
Québec  
Québec  
G1J 0C7

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<b>Signature</b>	<b>Date</b>



## Annex A STATEMENT OF WORK

### CONTRACT: Inspection and maintenance of generator sets and petroleum product storage systems

MCTS  
35 Otis Street  
Les Escoumins, Quebec G0T 1K0

**EE517-221143**



Version 1.0

Update: June 21, 2021

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## **PART 1 – General**

### **1.1 ADDRESS**

1.1.1 The purpose of this specification is to set out the work at the following location:

35 Otis Street  
Les Escoumins

### **1.2 SITE AND BUILDING ACCESS**

1.2.1 The terms and conditions for access to the site must be prescribed by the Departmental Representative.

- See the Security Requirements Check List (SRCL) in the standing offer demand for security clearance

1.2.2 The Contractor must restrict to a minimum the number of vehicles parked on site. Those that are parked on site must bear company identification.

1.2.3 Building access will be governed by the regulations in effect and depend on the building. The wearing of identification cards may be required.

1.2.4 All employees must wear clothing bearing the company name or logo.

### **1.3 INTERPRETATION OF DOCUMENTS**

1.3.1 Any protected or classified document will be transmitted in paper version only or must be consulted in the premises of PSPC. Note that documents transmitted electronically must be unclassified.

### **1.4 WORK OBJECTIVES**

1.4.1 The bulk of the work consists in carrying out preventive maintenance of petroleum product storage systems connected to generator sets, as well as generator sets.

1.4.2 Maintenance on a weekly, monthly, semi-annual, annual and five-year basis is required to ensure adequate preventive maintenance. Some of this maintenance will be carried out by Department employees. See the pricing table in this bid solicitation for the delineation of the Contractor's responsibilities.

1.4.3 The Contractor must fill out the preventive maintenance form specific to each storage system in its entirety. These forms describe the regular inspection and maintenance activities as well as minor tasks to be carried out after deficiencies are found during inspections. No question may be ignored. At the end of the form, there is a space where the Contractor can enter their recommendations for all of the items on the form to which the Contractor answered "no", by matching it with the number of the corresponding item as well as the estimated price submitted to carry out the required task.

### **1.5 CONDITIONS**

1.5.1 Sections 2.1, 2.2, 2.3 and 2.4 of these Specifications will be performed at lump-sum rates set out in Part A of the Price Table to be filled out.

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- 1.5.2 If repair work is required and authorized by the Department, it will be done at the hourly rate set out in Part A of the Price Table to be filled out.
  - 1.5.3 The Contractor must provide at all times an emergency service to cover possible breakdowns. He/she must ensure that the required employees will be on site within a maximum period of two (2) hours. Only the Building Technical Authority or his/her representative may authorize service calls and work orders.
  - 1.5.4 The Contractor will provide all necessary parts for carrying out the maintenance or repair work for which he or she is responsible.

## 1.6 THE CONTRACTOR 'S RESPONSIBILITIES

- 1.6.1 Assume responsibility for any accident or damage caused by its employees to government property or to any person on the premises. The Contractor must promptly repair damage at own expense to the satisfaction of the Department representative.
- 1.6.2 Assume responsibility for any accident or damage caused by its equipment to government property or to any person on the premises of this equipment is defective or was left unattended. The Contractor must promptly repair damage at own expense to the satisfaction of the Department representative.
- 1.6.3 Assume responsibility for the safety of its personnel and assume occupational health and safety responsibility for the work that the Contractor will be performing.
- 1.6.4 Assume sole responsibility for the safety of its equipment and material during and after working hours. PWGSC will not be held liable for vandalism, theft or loss.
- 1.6.5 For each request, verify the work to be done and determine quantities. This verification can be done either by telephone or by a site visit, and the Contractor must cover all costs.
- 1.6.6 Inform all subcontractor regarding contract requirements.

## 1.7 PROTECTION AND PREVENTION

- 1.7.1 Maintenance and repair work must be carried out so as not to hamper the normal operations of building users and according to a schedule that causes the least possible disruption to building occupants and users.
- 1.7.2 In accordance with the safety standards of the Department du Travail du Québec, the Contractor must take all safety measures and precautions necessary to protect persons and property from accidents and damage while maintenance or repair work is being carried out.

## 1.8 ESTIMATES

- 1.8.1 Upon the request of the Departmental Representative, provide, at no charge, an estimate of the cost of the work to be performed based on an hourly rate or a lump sum.
- 1.8.2 Include in the estimate:
  - the number of hours anticipated;
  - the description and cost of parts and materials likely to be used;
  - the delivery timeframes imposed by suppliers; and
  - the work schedule.
- 1.8.3 PWGSC will not be bound by any estimate.

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## 1.9 AVAILABILITY AND TIME FRAMES

### Communication:

- 1.9.1** To be reachable by telephone and mail, during normal business hours of 7:00 a.m. to 5:00 p.m., Monday to Friday, and outside normal working hours on evenings, after 5:00 p.m., weekends and statutory holidays.

### Response time for the execution of an urgent request:

- 1.9.2** The Contractor must provide emergency service at all times to cover possible breakdowns. The Contractor must be able to report to the site within two (2) hours of receiving an emergency notice. Following an emergency call, the Contractor must confirm the completion of work and provide a detailed service report to the Departmental Representative.

### Hours of work:

- 1.9.3** Unless otherwise indicated, work shall be done Monday to Friday between 7:30 a.m. and 4:00 p.m.
- 1.9.4** The Contractor will provide a fixed annual schedule of visits planned as part of the preventive maintenance activities (Part A of the contract). The calendar will specify the dates and time of the planned visits, as well as the type of visit (monthly, semi-annual, annual, five-year). It should be updated annually and as needed.

### Miscellaneous

- 1.9.5** The Contractor does not have the exclusive right to carry out work in the fields (trades) mentioned in these specifications. The Canada reserves the right to have work performed by other people.

## 1.10 INSPECTION AND CONTROL

### Note: Inspection and control will take place following:

- Work carried out in each individual call-up;
- At the request of the Departmental Representative.

### Communication on site

- 1.10.1** Be available to accompany the Departmental Representative on work inspections.
- 1.10.2** Submit all action taken for acceptance by the Departmental Representative in the form of a written or digital report.
- 1.10.3** Report every time there is an issue at the site.
- 1.10.4** Contact the Departmental Representative at the beginning and end of each visit for a call-up.
- 1.10.5** As soon as the job is finished, submit by mail to [QUEGII.QUEPFM@TPSGC-PWGSC.GC.CA](mailto:QUEGII.QUEPFM@TPSGC-PWGSC.GC.CA), for verification a work ticket detailing the:
- a) Place and date the work was performed;
  - b) Description of the work performed;
  - c) The names of all persons employed;
  - d) The exact time of every arrival and departure according to the log and the exact time of every interruption and resumption of work, if the contract provides for work at hourly rates.
  - e) The quantities and descriptions of billable goods, if payment for such goods is provided in call-up;
  - f) The signature of the employee who wrote up the work ticket;
  - g) Be available to the Departmental Representative when he/she inspects the work carried out;
  - h) Submit all work for inspection and acceptance by the Departmental Representative.

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## **1.10.6 WORK AT HOURLY RATES (REPAIRS AND SERVICE CALLS)**

- 1.10.6.1 Performance of repair work at hourly rates, as well as service calls, must in all cases be pre-authorized by the technical officer and confirmed through submission of the duly completed "Work Order" form.
- 1.10.6.2 The applicable hourly rates shall be the rates set out in Part B and must include benefits, administrative costs and profit.
- 1.10.6.3 For repairs and service calls, the Contractor will be reimbursed for the authorized travel expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance with the meal and incidental expense allowances specified in Appendices B, C and D of the Treasury Board Travel Directive, and with the other provisions of the directive referring to "travellers", rather than those referring to "employees" ([http://www.tbs-sct.gc.ca/pubs\\_pol/hrpubs/TBM\\_113/td-dv\\_f.asp](http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_f.asp)). All travel must have the Department's prior authorization.

## **1.11 CLEAN-UP**

- 1.11.1 While the work is in progress, the site must be clean and free of garbage and debris. Volatile waste must be stored in covered metal containers and removed from the site on a daily basis.
- 1.11.2 On completion of the work, leave the site clean and free of garbage, debris, materials, tools and equipment to the satisfaction of the Departmental Representative.
- 1.11.3 Dispose of waste materials outside PWGSC property in accordance with federal, provincial and municipal environmental protection regulations. Such waste materials must also include demolition materials not kept by PWGSC. For toxic liquids and waters containing suspended solids, have each load approved by the Departmental Representative.
- 1.11.4 For the disposal of waste materials, the Contractor is responsible for finding a site where dumping is authorized and for covering the cost of the fees claimed by the owner of the dump site.

## **1.12 FIRST SITE MEETING**

- 1.12.1 The first site meeting must be held as soon as possible following the awarding of the standing offer. The location of the meeting will be determined by the Departmental Representative. The Departmental Representative's and the Contractor's authorized Representatives must attend to set the terms, schedules and detailed operating procedures that will be in effect over the life of the contract.
- 1.12.2 At the meeting, the following information must be provided:
- a) name and telephone number of the person in charge of administration;
  - b) names and phone numbers of the persons in charge or foremen authorized to be on the work site;
  - c) list of the names of employees who will be working on federal government property and proof of a valid reliability status list;
  - d) list of emergency numbers;
  - e) during the contract period, inform the Departmental Representative in writing of any change to the information provided.

## **1.13 SMOKING POLICY**

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**1.13.1** Smoking is prohibited inside federal government buildings or within the limits mentioned on the premises.

#### **1.14 PARTS AND TOOLS**

**1.14.1** The Contractor is required to repair or, when necessary, replace worn parts with the new parts.

**1.14.2** The Contractor will provide the instruments, tools and all materials (or parts) necessary for the maintenance, repair or replacement of parts covered by the contract.

**1.14.3** The spare parts must be genuine and come from the manufacturers of the equipment. When it is not possible to obtain genuine replacement parts or materials, the Contractor must then use equivalents whose quality will at least be equal to or superior to that of the originals; the equivalents must be approved by the representative of the ministry.

**1.14.4** The representative of the ministry reserves the right to decide on the quality of the spare parts; this decision will be final and without appeal.

**1.14.5** Any parts installed without approval or found non-compliant by the departmental representative must be replaced within eight (8) days, otherwise the Contractor will be considered to be in default.

**1.14.6** Any change of parts must be authorized in advance by the representative of the ministry.

#### **1.15 SECURITY OF THE PREMISES**

**1.15.1** The Contractor and the representatives of his firm must comply with the security regulations of the building.

**1.15.2** The Contractor will provide instructions, notices, signs to notify the administrator and occupants of the building of the work in progress.

**1.15.3** The material must be delivered to the location stipulated by the building administrator. The Contractor's representatives must vacate this area upon receipt of the material, unless otherwise authorized by the administrator.

**1.15.4** The Contractor or his representatives must sign the attendance register at the place designated by the building administrator. They must indicate the time of entry and exit as well as the reasons for the visit.

#### **1.16 DEPARTMENT REQUIREMENTS**

**1.16.1** The Contractor must demonstrate that it has the necessary resources to respond to service calls within a maximum period of two (2) hours.

**1.16.2** The Contractor must provide proof that the work on the petroleum product storage systems will be carried out by a person who a 1.8 Licence – Petroleum equipment installation contractor issued by the Régie du bâtiment du Québec.

#### **1.17 REPORTS, CERTIFICATES AND WORKSHEET**

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**1.17.1** After each inspection, the Contractor must complete a detailed site visit report including the building name, address and the date. He will have to report the task accomplished, the parts that have been changed and / or repaired and the number of hours of each worker assigned to the work. The Contractor will present separate worksheets for maintenance work and repair work.

**1.17.2** The report must be sent after each inspection to the email address [TPSGC.RQSGBIAssuranceQualite-QRSGENQualityAss.PWGSC@tpsgc-pwgsc.gc.ca](mailto:TPSGC.RQSGBIAssuranceQualite-QRSGENQualityAss.PWGSC@tpsgc-pwgsc.gc.ca)

## **1.18 MANUFACTURER'S INSTRUCTION**

**1.18.1** Maintenance of service on systems, apparatus and equipment must be provided by the Contractor in strict accordance with the instructions and directives of the manufacturers and suppliers concerned.

## **1.19 ADDITIONS/MODIFICATIONS**

**1.19.1** The ministry reserves the right to move, modify or add devices and equipment attached to them. The Contractor will be required to maintain it at no additional cost, provided that the amount of equipment added does not exceed 3% of the existing quantities.

## **1.20 PERMITS**

**1.20.1** The Contractor must obtain, at own expense, all permits and certificates that the Contractor is required to have. In all cases, the successful bidder must comply, at own expense, with all requirements associated with these permits and certificates.

**1.20.2** The Contractor must have a 1.8 Licence – Petroleum equipment installation contractor issued by the Régie du bâtiment du Québec.

**1.20.3** The technician performing the work must have a certificate issued by Veeder-Root for the maintenance of the TLS or ILS system, as the case may be.

## **1.21 COMPANY QUALIFICATIONS**

**1.21.1** The Contractor must perform the work taking care to inconvenience the occupants of the building and the public as little as possible and disrupting the normal use of the building and operating activities as little as possible.

## **1.22 WORKER QUALIFICATIONS**

**1.22.1** The workers who perform for this contract work must have been previously authorized by the Departmental Representative, in accordance with the criteria below.

**1.22.2** Work set out in these specifications must be performed by permanent employees employed directly by the company and qualified in accordance with the next paragraph.

**1.22.3** During the period, if an authorized person is no longer available or his or her qualifications change, the authorized person must be replaced by someone else who meets the requirements of the contractual documents, under the same conditions and to the Departmental Representative's satisfaction.

**1.22.4** All persons handling hazardous materials must be aware of the WHMIS requirements relating to the products used. (See part 3 of the specifications.)

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1.22.5 All expenses related to training, qualifications, certifications or exemptions are at the Contractor 's expense.

1.22.6 All persons performing construction trade work, whether said work is included in these specifications or is related work, must hold a competency card in good standing issued by the Commission de la construction du Québec (CCQ), or by Emploi Québec (formerly the Société québécoise de Développement de la Main-d'œuvre). All persons employed must also have sufficient experience to carry out the work requested.

### 1.23 EQUIPMENT

1.23.1 The Contractor must use one or more service truck(s) owned by it for the work under this Standing Offer. The truck(s) must contain **tools and service equipment necessary to perform the Work.**

1.23.2 The Contractor must have all the necessary equipment, e.g., **ladders, step ladders, hoisting equipment, and all the products and materials** to properly carry out the work in each of the call-ups.

1.23.3 At no time may the Contractor use materials, equipment, products or tools owned by the Government of Canada.

1.23.4 The Contractor must perform the work without the assistance of PWGSC employees or building occupants.

1.23.5 The Contractor must ensure that all equipment used is in good condition. The Departmental Representative reserves the right to remove equipment deemed to be defective or unsuitable and take it out of service. The Contractor must appropriately replace defective equipment within 24 working hours of a written notice from the Departmental Representative.

### 1.24 MOBILIZING WORK

1.24.1 If a roadway needs to be closed, make sure it is re-opened to traffic as quickly as possible.

1.24.2 Supply and install the necessary guardrails and signage to ensure public safety and the protection of structures.

1.24.3 Install scaffolding in a safe and sturdy manner independent of walls and in accordance with standards and compliant with CSA-S269.2-16.

1.24.4 Take all necessary precautions to prevent the spread of odours in the building.

1.24.5 On the date the work is scheduled to start, be present at the work site with all the tools, equipment, materials and parts needed to start and pursue the work without interruption.

1.24.6 No technical room will be accessible without the presence of a PWGSC employee.

### 1.25 BYLAWS AND PERMITS

1.25.1 The Contractor must perform the works in accordance with federal, provincial, municipal regulations and codes that govern the various stages of the work.

1.25.2 All expenses relating to permit applications and the issuance and administration of permits are at the Contractor 's expense.

### 1.26 EXECUTION QUALITY

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- 1.26.1 The work must be performed in accordance with the norms in force. If the Departmental Representative observes any non-compliance during an inspection, the work must be redone at the Contractor 's expense.
  - 1.26.2 The Contractor must have all the specialized equipment and qualified staff needed to complete the work.
  - 1.26.3 The use of subcontractor s, subject to prior authorization by PWGSC, does not in any way lessen the Contractor 's responsibility with respect to quality and speed of execution.

## 1.27 ENVIRONMENT

- 1.27.1 Respect the environmental clauses in force.

## 1.28 FIRE PROTECTION

- 1.28.1 During all operations, we must comply with the National Fire Code, latest version.

## 1.29 ACCESSIBLE ACT

- 1.29.1 PWGSC undertakes to comply with the relevant provisions of the *Accessible Canada Act*. Any non-compliance that may hamper service delivery will be assessed by PWGSC in order to put the required accommodations in place.

## 1.30 IDENTIFICATION OF PERSONNEL OF THE CONTRACTOR

- 1.30.1 It is the responsibility of the Contractor to provide the following elements at its expense at the outset of the contract and to keep this information up to date:

- 1.30.1.1 The list of all personnel that will have access to the facilities;

- 1.30.1.2 Confirmation from Industrial Security that each member of staff who will have access to the facilities has valid security clearance in accordance with the contract requirements. For more information, see the link below.

**Toll-free number:** 1-866-368-4646

**National Capital Region:** 613-948-4176

**Email:** [ssi-iss@tpsgc-pwgsc.gc.ca](mailto:ssi-iss@tpsgc-pwgsc.gc.ca)

**Website:** [www.tpsgc-pwgsc.gc.ca/esc-src](http://www.tpsgc-pwgsc.gc.ca/esc-src)

<https://www.tpsgc-pwgsc.gc.ca/esc-src/enquete-screening-fra.html>

- 1.30.2 The Departmental representative will require from the Contractor to supply option 1 and/or option 2 at its convenience.

**Option 1:** Provide a passport-size colour photograph (digital format) for each employee who will be working on site.

Consult the link below for all photo requirements: <https://www.canada.ca/fr/immigration-refugies-citoyennete/services/passeports-canadiens/photos.html>

**Option 2:** Provide a passport-size colour photograph (paper format) for each employee who will be working on site.

Consult the link below for all photo requirements: <https://www.canada.ca/fr/immigration-refugies-citoyennete/services/passeports-canadiens/photos.html>

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**NOTE:**

- In order to access the facilities, the Contractor must provide the following information as soon as possible and then await confirmation that everything is in order from the departmental representative.
- Depending on the validity period for the access cards and the duration of the standing offers, the Contractor may be required to provide new photographs (see 1.30.2) at its expense for employees with access to the facilities.

**1.31 ACCESS TO FACILITIES**

**1.31.1 Visitation schedule**

1.31.1.1 Regular maintenance

All visits must be scheduled with the departmental representative. Regular maintenance is normally scheduled a minimum of one month in advance.

1.31.1.2 Follow-up or maintenance following maintenance

Maintenance or follow-up may be required following regular maintenance. In this case, a minimum of 72 working hours is required in order to notify all stakeholders and occupants on site. This is always coordinated with the departmental representative.

1.31.1.3 Emergency maintenance

In the event of an emergency situation, go to the reception area, and the departmental representative who assigned you will be there to meet you.

NOTE: For anything that is not an emergency response situation, access will not be granted without prior authorization from PSPC.

**1.31.2 Visitor card**

1.31.2.1 For access to a visitor card, each member of the Contractor's staff MUST:

- Provide a valid piece of identification to the custodian, (e.g.: driver's licence, health card);
- Sign the attendance log and provide a telephone number where they can be reached.

1.31.2.1.1 During the visit

Each member of the Contractor's staff must wear the identification provided in a very obvious manner.

1.31.2.1.2 At the end of the shift

Each member of the Contractor's staff must return the identification card and sign the log again.

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## **PART 2 – EXECUTION**

2

### **2.1 GENERATOR SET**

#### **2.1.1 GENERAL**

2.1.1.1 The Contractor shall provide the labour, materials, tools and equipment needed to perform the maintenance work described in this section on all of the equipment comprising the systems described in the GEN module including all components thereof and inspections. The Contractor shall follow the description of work and omit irrelevant items.

2.1.1.2 The purpose of the Specifications is to ensure that the equipment is kept in excellent operating condition. These Specifications shall be considered a minimum standard under which the Contractor shall work and in no way represents the full extent of the Contractor's responsibilities and obligations.

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- 2.1.1.3 All work shall be performed in accordance with the manufacturer's instructions, the latest editions of the National Building Code. Testing shall comply with CSA-C282, latest revision, as well as NFCC section 6.5 and any other applicable standards.
- 2.1.1.4 While the building is occupied, the Contractor shall not carry out any tests or inspections that could accidentally trigger the transfer switch. Testing during occupancy hours is prohibited without written authorization by the building technical officer.
- 2.1.1.5 The Contractor shall arrange with the technical officer when to operate the generator set under load.
- 2.1.1.6 Workforce development shall meet CSA-C282, latest revision.
- 2.1.1.7 Annual oil changes shall be done in accordance with the manufacturer's recommendations.
- 2.1.1.8 Adjust injectors (if required) in accordance with the manufacturer's recommendations. Should the injectors need replacing, a written estimate shall be submitted to the technical officer. The technical officer may seek a second opinion following the Contractor's recommendation.

## **2.1.2 REPORTS**

- 2.1.2.1 Within 10 business days of the completion of the work, the Contractor must provide the technical officer with a complete typed report of the inspections, including the list of equipment confirming that it is operating properly.
- 2.1.2.2 The form and the information to be recorded in each report must, before the execution of the contract, be submitted for approval by the Technical Authority, who reserves the right to amend the information, where applicable.
- 2.1.2.3 Each report shall be verified and countersigned by the Building Technical Authority or a person he or she designates.
- 2.1.2.4 Reports can be delivered by mail, courier or email.
- 2.1.2.5 The Department must have received the required reports and certificates before paying the invoice.
- 2.1.2.6 The report must be written in French.

## **2.1.3 INSPECTION, TESTING AND MAINTENANCE WORK LOG**

- 2.1.3.1 The Contractor shall establish/keep up to date an inspection, testing and maintenance work log for each generator set, in accordance with the model provided, and retain these logs for consultation by the competent authority. These logs shall be available for consultation during the time required between two inspections, maintenance operations or tests, and must include the following elements:
- The date the work was performed;
  - A note indicating parts replaced;
  - A note indicating the defect found and the measures taken to correct it;
  - The names of persons who performed the work;
  - A note verifying that any switches or controls that were deactivated for safety purposes during maintenance have been restored to their intended operation condition.

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(ref: NFCC 6.5.1.4/CAN/CSA-C282-11.1.2 and 11.5.3)

END OF **GENERATOR SET SECTION**

**2.2 GENERATOR SET MODULE**

**2.2.1 INSPECTIONS BEFORE START-UP**

- 2.2.1.1 Ensure that all safety measures are followed.
- 2.2.1.2 Ensure that all safety signs are in place at the entrance to the emergency generator room and that they indicate that the equipment is controlled automatically and could start at any time.

**2.2.2 OPERATING CONDITIONS**

- 2.2.2.1 Check that the safe operating temperature of the engine is not exceeded.
- 2.2.2.2 Check that the room temperature does not exceed 38°C nor fall below 10°C.
- 2.2.2.3 Check that the combustion air required for the engine is available.
- 2.2.2.4 Check that the operating temperature of the cooling system components does not exceed the level recommended by the manufacturer.
- 2.2.2.5 Ensure that the independent emergency lighting units provide light of 50 lux for at least two hours in all rooms containing equipment requiring adjustment and maintenance.
- 2.2.2.6 Inspect the exhaust pipe and muffler for any loss of particles and other pollutants.

**2.2.3 OPERATION AND MAINTENANCE**

- 2.2.3.1 Electrical emergency power supply equipment must be operated and maintained in compliance with the manufacturer's recommendations and instruction manuals, and clauses 11.1.2 to 11.5 of Chapter 11, Operation and Maintenance Program, of Standard CSA-C282-09, latest edition.

**2.2.4 INSPECTION LISTS**

- 2.2.4.1 The inspection lists presented in the tables below have been created using the tables setting out inspection, test and maintenance requirements contained in Standard CSA-C282 published by the Canadian Standards Association. Should there be any discrepancies between the lists and the tables, the content of the tables in the Standard shall take precedence.
- 2.2.4.2 The clauses and tables given as a reference in each of the tables are those contained in Standard CSA-C282-19 published by the Canadian Standards Association.
- 2.2.4.3 The five-year inspection shall be determined by the Department.

**2.2.5 WEEKLY INSPECTIONS**

2.2.5.1 Weekly inspections, tests and maintenance shall be performed in compliance with the requirements and with the assistance of Table 2 of Standard CSA-C282-15.

2.2.5.2 The inspections set out in the following table will be performed during monthly, quarterly, annual and five-year inspections.

**Table 2 of Standard CSA-C282-19**

Weekly Inspection, Testing and Maintenance Work Requirements

(See clauses 6.7, 6.8.1, 6.11.2, 7.3.1, 7.6.1, 10.7, 11.1.2, 11.5.1 and 11.5.2 and tables 3 through 5 of the standard)

**\*\*\* WEEKLY INSPECTIONS WILL BE CARRIED OUT BY PSPC\*\*\***

1.	<p><b>2.2.6</b> Consumables:</p> <p><b>2.2.7</b> a) Inspect day tank fuel level (gas pressure) and main tank level, if applicable (gas pressure). Minimum 2-hour supply required (see clause 7.3.1).</p> <p><b>2.2.8</b> b) Inspect lubricating oil level. c) Inspect engine coolant level. d) Inspect engine, generator, fuel tank(s), and cooling systems for leakage. e) Inspect for proper operation of fuel transfer pump (if applicable). f) Inspect fuel filter for contamination if filter is equipped with a transparent bowl.</p>
	<p>Starter system:</p> <p>a) Electric starter: inspect starter for cleanliness, mounting and terminal security. b) Air starter: (i) Inspect air tanks for pressure. (ii) Inspect valves for leakage. (iii) Test auxiliary engine and compressor for proper operation. (iv) Bleed off any condensation.</p>
3.	<p>Batteries and charging equipment:</p> <p>a) Inspect all battery cells for electrolyte fill level (applies only to flooded or open lead acid batteries). b) Test all battery cells for correct electrolyte-specific gravity (applies only to flooded or open lead acid batteries). c) Inspect electrical connections for tightness and evidence of corrosion. d) Inspect battery for cleanliness and dryness between terminals. e) Inspect charger electrical connections for cleanliness and tightness. f) Check operation of the battery charger in both float and equalize mode g) Change the batteries every three (3) years. Enter the dates when the batteries were last replaced and the next expected replacement date in the system (CRM) log.</p>
4.	<p>Engine:</p> <p>a) Test lubricant and/or coolant heaters for proper operation. b) Inspect governor control linkages and oil level (if applicable). c) Inspect fuel pump oil sump (if applicable). d) Inspect fan belts for correct tension and wear.</p>
5.	<p>Control panel:</p> <p>a) Inspect control panel covers for security. b) Test annunciator lamps to confirm they are operational. c) Inspect control panel settings (to ensure unit is ready for automatic start-up). d) Test remote visual and audible trouble signals at the building fire alarm panel.</p>
6.	Inspect air control louvre settings for proper operation.
7.	Test emergency lighting unit(s).
8.	Verify whether room temperature is above 10°C.
9.	Inspect generator and transfer switch room(s) for cleanliness and accessibility to all components of the emergency system.
10.	Correct all defects found during inspections and tests.
11.	Enter all inspections, tests and corrective actions in the maintenance log (see clause 11.5.3).

**2.2.9 MONTHLY INSPECTIONS**

2.2.9.1 Monthly inspections, tests and maintenance shall be performed in compliance with the requirements and with the assistance of Table 3 of Standard CSA-C282-19.

**Table 3 of Standard CSA-C282-19**

Weekly Inspection, Testing and Maintenance Work Requirements

(See clauses 6.7, 10.7, 11.1.2, 11.4, 11.5.1 and 11.5.2 tables 4 and 5 of the standard.)

**\*\*\* MONTHLY INSPECTIONS WILL BE CARRIED OUT BY PSPC \*\*\***

1.	All items specified in Table 2.
2.	Test and verify the entire system as follows: a) Simulate a failure of the normal electrical supply in the building. b) Verify that the output current power of the battery charger increases at cranking. c) Operate the system under at least 30% of the rated load for 60 minutes. d) Operate all automatic transfer switches under load. e) Inspect brush operation for sparking. f) Inspect for bearing seal leakage. g) Inspect for correct operation of all auxiliary equipment, e.g., radiator shutter control, coolant pumps, fuel transfer pumps, oil coolers, and engine room ventilation system(s). h) Record the readings for all instruments in the log (see clause 11.5.3) and verify that they are normal. i) Drain the exhaust system condensate trap.
3.	Inspect block heater hoses and wires.
4.	Correct all defects found during inspection and tests.
5.	Record all inspections, tests, and corrective actions in the log (see clause 1 1.5.3).
6.	Inspect all electrical components to ensure that they are operating correctly.

## 2.2.10 SEMI-ANNUAL INSPECTIONS

2.2.10.1 Semi-annual inspections, tests and maintenance shall be performed in compliance with the requirements and with the assistance of Table 4 of Standard CSA-C282-19.

2.2.10.2 The work described in points 2 to 9 of Table 4 of Standard CSA-C282-19 requires special skills. This work shall be carried out by a qualified contractor, the system manufacturer, or individuals trained and certified by the system manufacturer.

\* If it is not possible to create the condition in point 5 below, a failure condition shall be simulated, if circumstances allow.

**Table 4 of Standard CSA-C282-19**

Semi-Annual Inspection, Test and Maintenance Work Requirements

(See clauses 6.7, 7.6.1, 10.7, 1 1.1.2, 1 1.5.1 and 1 1.5.2 and table 5 of the standard)

**\*\*\* SEMI-ANNUAL INSPECTIONS CARRIED OUT BY THE CONTRACTOR \*\*\***

1.	All items specified in Tables 2 and 3.
2.	Inspect and clean engine crankcase breathers.
3.	Inspect and clean all engine linkages.
4.	Lubricate the engine governor and ventilation system.
5.	Test protective devices for proper operation.*
6.	Before start-up, perform two full cranking cycles (as specified in clauses 10.4.1 and 10.4.2). Immediately before the end of each cycle (and while still cranking), measure and record the lowest indicated battery voltage. If the measured voltage is less than 80% of the battery's rated voltage, replace the battery. Alternatively, perform a battery load test using as suitable load tester.
7.	Inspect ventilation system belt(s).
8.	Correct all defects found during inspections and tests.
9.	Enter all inspections, tests and corrective actions in the maintenance log (see clause 11.5.3).

## 2.2.11 ANNUAL INSPECTIONS

2.2.11.1 Annual inspections, tests and maintenance shall be performed in compliance with the requirements and with the assistance of Table 5 of Standard CSA-C282-19.

2.2.11.2 The work described in points 2 to 10 of Table 5 of Standard CSA-C282-19 require special skills. All such work must be done by a licensed contractor, the system manufacturer or individuals trained and certified by the system manufacturer.

**Table 5 of Standard CSA-C282-19**

Annual Inspection, Test and Maintenance Work Requirements

(See clauses 7.3.7, 8.7.1, 11.1.2, 11.3, 11.5.1, 11.5.2 and 11.5.5.1, B.13, B.21 and B.24 of the standard)

**\*\*\* ANNUAL INSPECTIONS CARRIED OUT BY THE CONTRACTOR \*\*\***

1.	All items specified in Tables 2 to 4.
2.	Control panel (see clause B.23): a) Open all inspection covers and inspect all electrical connections. b) Test breakers for proper operation. c) Clean insulators and bushings. d) Test voltage regulator for proper operation. e) Operate all moving parts to ensure that they move freely. f) Clean and dress contacts as necessary. g) Remove all dust. h) Check gauge calibration. i) With the generator set operating at full load (as described in clause 11.3), conduct an infrared survey of all electrical connections to identify high resistance connections. j) For off-site fuelled generators, turn position-indicating gas valve to off-position to ensure valve rotates properly and that the audible alarm on generator control panel is activated.
3.	Engine: a) Change engine lubrication oil and filters. b) Test strength of coolant and chemical protection level of coolant inhibitors. c) Change fuel filters, clean strainer(s), and verify that the fuel supply valve is open. d) Inspect the exhaust system. Check and record the back pressure of the exhaust system to ensure that it complies with the engine manufacturer's requirements and compare with previous readings. e) Clean and lubricate linkages. f) Inspect air filters. g) Inspect mechanical connections. h) Inspect electrical connections. i) Inspect all external surfaces of heat exchanger(s) and clean as necessary. j) Inspect all belts and hoses and replace if necessary. k) Test and inspect ignition system(s). Replace any defective components. l) Inspect coolant pump(s) for leaks and external wear (if belt driven, remove the belt(s) first).
4.	Fuel tank: The fuel oil in any storage (and day tank, if used) shall be tested in accordance with clause 1 1.5.5, and non-compliant fuel oil shall be: a) drained and refilled with fresh fuel in accordance with section 6.5.1.5 of the National Fire Code of Canada; or b) fuel filtered to remove water, scale, bacteria, and oxidized gums/resins to minimize filter clogging and ensure diesel start-up (see clause B.24 for commentary). When the fuel is filtered, it shall be treated with a suitable conditioner and stabilizer to minimize degradation while in storage. <b>Note:</b> The bottom(s) of the tank(s) shall also be tested chemically for water.
5.	Generator: a) Test surge suppressor and rotating rectifier on brushless machines. b) Grease bearings (replace old grease with new) (if applicable). c) Clean commutator and slip rings (if applicable). d) Clean rotor and stator windings using clean compressed air. e) Inspect coupling bolts and alignment. f) Inspect conduits for tightness.

	<ul style="list-style-type: none"> <li>g) Inspect windings at rotor and stator slots.</li> <li>h) Inspect all electrical connections.</li> <li>i) With the generator set operating at full load (see clause 11.3), conduct an infrared survey of all electrical connections to identify any high-resistance connections.</li> </ul>
6.	<p>Overcurrent devices:</p> <ul style="list-style-type: none"> <li>a) Isolate all overcurrent devices from all electrical connections.</li> <li>b) Remove all dust.</li> <li>c) Check operation of devices.</li> <li>d) With the generator set operating at full load (see clause 11.3), conduct an infrared survey of all electrical connections, contacts and components under load.</li> </ul>
7.	<p>Transfer switches:</p> <ul style="list-style-type: none"> <li>a) Isolate transfer switch, open all inspection covers, and inspect all electrical connections.</li> <li>b) Operate all moving parts to ensure free movement.</li> <li>c) Clean and dress contacts as necessary.</li> <li>d) Remove all dust.</li> <li>e) Clean and lubricate linkages.</li> <li>f) Conduct an infrared survey of all electrical connections, contacts and energized components while under load on both the normal and the emergency side.</li> </ul>
8.	Lubricate door locks and hinges, especially those of outdoor enclosures.
9.	Conduct a 2-hour full-load test (see clause 11.3).
10.	As necessary, review and comment on the technical requirements of Tables 2 to 4 with persons responsible for performing the work.
11.	Correct all defects found during inspections and tests.
12.	Record all inspections, tests, and corrective actions in the maintenance log (see clause 11.5.3).

## 2.2.12 FIVE-YEAR INSPECTIONS

2.2.12.1 Five-year inspections, tests and maintenance shall be performed in compliance with the requirements and with the assistance of Table 6 of Standard CSA-C282-19.

2.2.12.2 The work described in points 2 to 5 of Table 6 of Standard CSA-C282-19 requires special skills. All such work must be done by a licensed contractor, the system manufacturer or individuals trained and certified by the system manufacturer.

2.2.12.3 The five-year inspections, tests and maintenance supplement the annual inspections. They shall be coordinated so as to be carried out at the same time.

**Table 6 of Standard CSA-C282-19**

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Five-Year (Every Five Years) Inspection, Testing and Maintenance Work Requirements  
(See clauses 11.1.2, 11.5.1 and 11.5.2 of the standard.)

**\*\*\* FIVE-YEAR INSPECTIONS CARRIED OUT BY THE CONTRACTOR \*\*\***

1.	Generator: Inspect insulation of generator windings. Use an insulation tester (Megger). The resistance in megohms should be not less than: <u>Rated voltage + 1000</u> 1000 If the resistance is less, dry out the insulation using the auxiliary heat process.
2.	Engine: a) Drain and flush the cooling system. Refill the system with new coolant. b) Clean radiator tubes and cooling fins. c) Replace thermostats. d) Inspect valve clearance and adjust as appropriate.
3.	With the generator set operating at full load (see clause 11.3), conduct an infrared survey of all electrical connections, contacts and components under load.
4.	Correct all defects found during inspections and tests.
5.	Record all inspections, tests, and corrective actions in the maintenance log (see clause 11.5.3).

### 2.2.13 OVERVIEW OF EQUIPMENT

#### 35 OTIS ROAD, Les ESCOUMINS (ONE [1] GENERATOR SET)

**Generator:** Capacity: 125 KW, 600 /347Volt, 60 cycles, 3 phases, Kohler brand, Model 125REOZJF, Series No.: GM72460

**Engine / Alternator:** John Deere brand, 4045HF285K model, Series R533086 series

**Transfer switch:** GE Zenith brand, Entelli-Switch model, Series No: 2522734

### 2.2.14 ROUTINE INSPECTION RECORDS (EXAMPLE)

EMERGENCY POWER		
	DATE	SIGNATURE
SEMI-ANNUAL		
ANNUAL		
EVERY FIVE YEARS		

#### END OF GENERATOR SET MODULE SECTION

## 2.3 PETROLEUM PRODUCT STORAGE SYSTEMS

### 2.3.1 GENERAL

2.3.1.1 The work for the purposes of this project includes, without being limited to, the following:

1. The inspection of storage tank systems, the characteristics of which are set out in the Petroleum Product Storage Systems Module section and appendices;
2. Completion of preventive maintenance forms specific to the systems;
3. Performance of maintenance activities prescribed and described on the forms;
4. Performance of minor work to correct deficiencies found during inspections following the approval of the Department's designated representative, including;

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5. Preparation and application of a coat of paint on the tank or pipe or any other equipment on which the corrosion protection is damaged;
  6. Repair of cracks in the concrete slab;
  7. Drafting of recommendations for large-scale work to be carried out, including the preparation of a cost estimate of the work;
  8. Site restoration.

### **2.3.2 SEQUENCES OF WORK**

- 2.3.2.1 The Contractor shall plan a work sequence and organize the work in such a way as to reduce the amount of time that the Contractor spends on the premises to a minimum.
- 2.3.2.2 The Contractor shall submit to the Department's designated representative a detailed schedule of the work at least five (5) days prior to the start of the work. The work completion date must be indicated on the schedule provided.

### **END OF PETROLEUM PRODUCT STORAGE SYSTEMS SECTION**

## **2.4 PETROLEUM PRODUCT STORAGE SYSTEMS MODULE**

### **2.4.1 LES ESCOUMINS – LOCATION AND ACCESS**

- 2.4.1.1 The Les Escoumins Marine Communications and Traffic Services (MCTS) station is located at 35 Otis Road in Les Escoumins. The work shall be carried out within the property boundaries and inside and outside the buildings in accordance with the site's special characteristics.

### **2.4.2 PETROLEUM EQUIPMENT – LES ESCOUMINS 04 et 05 (ROOM 502A)**

- 2.4.2.1 The storage system comprising the Les Escoumins 04 and 05 tanks does not have a registration number with Environment Canada. This system does not have to be registered.
- 2.4.2.2 The Les Escoumins 04 and 05 system was installed in 2011. It consists of two (2) above-ground tanks that are installed in parallel in a retention basin and are used to store diesel fuel used to power an emergency generator set. The tanks each have a 1,135-litre capacity and are installed horizontally inside.
- 2.4.2.3 The pipes are above-ground and made of steel and copper. The supply and return connections are 19 mm in diameter. The filling pipe is 50 mm in diameter, while the vent pipe has a diameter of 75 mm.
- 2.4.2.4 The equipment is painted to protect it from corrosion.
- 2.4.2.5 The overflow protection system is a vent whistle. The Ktech Midget 277 model level indicator is installed in the tank. Leaks are detected by a surveillance sensor in the tank basin that is hooked up to a Veeder-Root TLS-300C system. Full information about the storage system is provided in the Les Escoumins 04 and 05 tank data sheet in Appendix A.

### **2.4.3 WEEKLY PETROLEUM INSPECTION EQUIPMENT**

**\*\*\* WEEKLY INSPECTIONS CARRIED OUT BY PSPC \*\*\***

1.	All maintenance must be performed by a certified technician in accordance with the manufacturer's recommendations.
2.	Carry out a visual inspection or electronic monitoring at the filling point. a) Electronic monitoring requires annual testing in accordance with the manufacturer's recommendations.
	General: a) Check that the system and its components have not traces of spilling or overflow. b) Check that the tank has no signs of leakage. If a leak is found, isolate the leak immediately and repair the pipe before putting the tank back into service. <b>Notify the Department representative promptly.</b> c) Check that the tank walls are in good condition. d) Check that the concrete slab around the retention basin is in good condition. e) Plug cracks in the slab following approval from the designated representative. f) Check that there are no smoking signs and that they are in good condition. g) Check that the tank filling opening is locked. h) Check that there is a product identification panel and that it is in good condition. i) Check that the vent hole and flame arrestor are in good condition. j) Check that the surrounds of the storage system are free of combustible material and objects that might damage it. Write up a report if necessary. k) Check that the anti-spill kit has all of the items listed in the inventory near the tank. l) Check that the pressure of the extinguishers is normal. m) Shake the extinguishers and check that they are sealed. n) Visually inspect all shut-off taps, filters and associated connections. o) Check that there are certification tags. If tags are missing, notify the manager.
3.	Carry out a visual inspection or electronic monitoring at the filling point. a) Electronic monitoring requires annual testing in accordance with the manufacturer's recommendations.
4.	<b>Level control system (level indicator):</b> a) Check that the Ktech Midget 277 mechanical gauging system is working normally. b) Check the fluid level displayed by the Ktech Midget 277 system. Enter what it is in the report. c) Apply a water detection paste on the measuring rod and check for the presence of water in the tank. If water is present, enter this information in the report. d) Using a dipstick, manually measure the fluid level in the tank. Use the tank chart to convert the height of petroleum product in the tank into litres. Enter this information in the report. e) Check the tank chart to see whether the levels match.

**2.4.1 MONTHLY PETROLEUM PRODUCT STORAGE EQUIPMENT INSPECTIONS**

**\*\*\* MONTHLY INSPECTIONS CARRIED OUT BY PSPC \*\*\***

1.	<u>Fuel Storage Tanks - Above Ground Single Wall Piping (Only)</u> All maintenance must be performed by a certified technician in accordance with the manufacturer's recommendations.
2.	Visually inspect all single walls above ground piping without secondary containment. If a leak is found immediately isolate the leak and repair before putting back into service.
3.	Visually inspect all shut-off taps, filters and associated connections. Check that there are certification tags. If tags are missing, notify the manager.
4.	The owner or operator of a storage tank system that has turbine, transition, dispenser, or pump sumps must have visually inspected those sumps to determine if they are leaking; and after that inspection they must either: (a) immediately use continuous sump leak monitoring for those sumps; or (b) visually inspect those sumps annually.
5.	For an aboveground storage tank, the authority having jurisdiction shall be notified immediately in the event of: (a) any unexplained loss in excess of the greater of:

	<p>(i) 1% of the throughput in one month from the storage tank system as indicated by the recording and reconciliation of inventory records done; or</p> <p>(ii) 1% of the storage tank system capacity.</p> <p>(b) inventory reconciliation showing five or more consecutive weeks of unexplained product losses; or</p> <p>(c) inventory reconciliation showing an unexplained loss in one calendar month.</p>
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**2.4.1 ANNUAL PETROLEUM PRODUCT STORAGE EQUIPMENT INSPECTIONS**  
**\*\*\* ANNUAL INSPECTIONS CARRIED OUT BY THE CONTRACTOR \*\*\***

1.	Inspect sight gauge, whistle, fuel transfer pump operation and pressure.
2.	Dip the tank with water indicator paste to determine the presence of condensation/water and enter the level in the report.
3.	Clean and inspect general condition. Clean external tank surfaces of corrosion if applicable.
4.	Remove any water accumulation.
5.	Check operation of level indicator.
6.	Analyze the sample taken from the tank; process for condensation or oxidation.
7.	Operate all valves through full stroke; leave fully closed or 1/4 turn short of fully open, as appropriate.
8.	Clean and replace filter or strainer.
9.	Check fittings for corrosion, clean, and paint.
10.	Check integrity of tank supports and base.
11.	Check spill containment for spillage and integrity.
12.	Check that the steel tank is protected against corrosion (including all underground steel pipes), if applicable.
13.	Check integrity of the leak detection system.
14.	<p>The owner or operator of a storage tank system subject to the Regulations that has turbine, transition, dispenser, or pump sumps must have visually inspected those sumps to determine if they are leaking; and after that inspection they must either:</p> <p>(a) immediately use continuous sump leak monitoring for those sumps; or</p> <p>a) (b) visually inspect those sumps annually.</p>
15.	<p>Inspection and performance testing in conformance with the manufacturer's requirements and procedures to ensure satisfactory equipment performance and operation of a storage tank facility shall be conducted annually and documented by a company or individual that is authorized by the authority having jurisdiction for:</p> <p>(a) automatic tank gauges and monitoring systems;</p> <p>(b) high-technology sensors;</p> <p>(c) electronic or mechanical leak detection equipment;</p> <p>(d) corrosion protection equipment;</p> <p>(e) pressurized piping emergency valves;</p> <p>(f) emergency shut-down devices;</p> <p>(g) containment sumps including dispenser, turbine and transition containment devices; and</p> <p>(h) overfill protection devices.</p>
16.	Bottom outlet tanks shall be checked for proper slope and, if necessary, the slope shall be corrected.

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**END OF THE PETROLEUM PRODUCT STORAGE SYSTEMS MODULE SECTION**

**PART 3 - PRODUCTS**

3

**3.1 GENERAL**

- 3.1.1 Upon issuance of a call-up, the Contractor must provide a list of all products.
- 3.1.2 A Upon issuance of a call-up, the Contractor must have at its disposal the parts and material required for the work required.
- 3.1.3 Have in inventory or in service trucks the basic materials and tools needed to perform most of the work for call-ups.
- 3.1.4 Use new devices, parts and materials that are free of defects.
- 3.1.5 For new facilities, use the devices, parts and materials specified by the Departmental Representative.

**3.2 MATERIAL SAFETY DATA SHEET (WHMIS)**

- 3.2.1 Refer to point 4.2 health and safety provisions *Safety Data Sheets – SDS (WHMIS 2015)*.

**3.3 DATA SHEETS**

- 3.3.1 At the request of the Departmental Engineer, be able to supply data sheets for all products used.

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## PART 4 - HEALTH AND SAFETY FOR MAINTENANCE WORK

4

### 4.1 GENERAL CLAUSES

**4.1.1** By accepting this contract, the Contractor agrees to supervise the work and assume all responsibilities normally bestowed upon the main Contractor and the employer under An Act respecting occupational health and safety and to act as supervisor of the work.

**4.1.2** The Contractor must manage your activities so that the health and safety of your staff, occupants of the building or facility and the public and protection of the environment always takes precedence over considerations of cost and scheduling.

The Contractor must comply with all requirements of these specifications, including:

**4.1.3** Comply at all times with the provisions of the Act respecting occupational health and safety, the Safety Code for the construction Industry and the Occupational Health and Safety Regulations where applicable.

**4.1.4** The Contractor shall submit to the departmental representative a prevention program specific to all the activities it is likely to carry out on the property at least 10 days prior to the start of work. The Contractor must subsequently update its prevention program if the course of work diverges from initial projections. The Departmental Representative may, after receiving the program and at any time during the contract, require that the program be modified or supplemented in order to better reflect the reality of the workplace. The Contractor must then make the necessary changes prior to the start of work.

This program must be based on the risks identified and must take into account the information and requirements contained in these specifications. The program must remain in force throughout the term of this standing offers and must satisfy the following requirements:

- Identify risks specific to each category of tasks that will be performed in order to execute this standing offers and the corresponding preventive measures based on the regulatory requirements.
- Identify the person responsible for implementing preventive measures.
- Take into account the risks that may affect the health and safety of the workers as well as the health and safety of the occupants of the building or facility and of the public.
- Include an accident response procedure.
- Include a workplace inspection checklist based on the content of its risk identification.
- Include any repair tasks that may be assigned under this contract.
- Include a written undertaking from all stakeholders to comply with the prevention program.

**4.1.5** The Contractor must submit the following documents to the building technical officer:

1. a copy of the training certificates required for application of these specifications and safe planning of the work (for example: general health and safety for construction sites, asbestos, lock-out, first aid.);

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2. a copy of the safety data sheet for every controlled product on the worksite, at least three days before the product is used on site;
  3. confirmation of medical certificates for supervisory staff and all employees where a medical examination is required under a statute, regulations, a directive, specifications or a prevention program, the Contractor must thereafter promptly submit confirmations of medical exams for all;
  4. a copy, signed and sealed by an engineer, of all plans and compliance certificates required under the Safety Code for the construction industry (S-2.1, r. 4), any other statute or regulation, or any other clause of the specifications or the contract. A copy of these documents must also be sent to the CNESST and be available on the worksite at all times;
  5. a mechanical inspection certificate for the machinery used to perform the work (e.g., elevating platforms);
  6. an investigation report within 24 hours following any accident that results in an injury or any incident that brings to light a potential hazard;
  7. a copy, within 24 hours, of any inspection report, notice of correction or recommendation issued by federal or provincial inspectors.

**4.1.6** The Contractor must ensure that the equipment, tools and protective equipment used to carry out the work are maintained and kept in good condition. Equipment, tools or protective devices that cannot be installed or used without compromising the health and safety of workers or the public are deemed to be inadequate for the work to be performed. The technical officer reserves the right to prohibit the use of equipment or tools deemed to be dangerous, defective or inappropriate.

**4.1.7** The Contractor must ensure that its employees have received the training and information needed to perform their tasks safely and that all necessary tools and protective devices are available, comply with the applicable standards, statutes and regulations and are used.

**4.1.8** The Contractor must take such measures as are needed to enforce and ensure compliance with the health and safety requirements set out in the contract documents, provincial regulations, applicable standards and the prevention program specific to the work, and to comply promptly with any order or notice of correction issued by the Commission de la santé et de la sécurité du travail (CSST).

Regardless of the number of workers assigned to the work, the Contractor must designate a person to act as workplace health and safety officer and give that person the authority to order work be stopped or resumed when the person deems such action to be necessary for health and safety reasons.

**4.1.9** Without limiting the scope of the preceding paragraph, the building technical officer may at any time order that work be stopped if the officer believes there is a hazard or risk to the health and safety of the employees assigned to the work, of the public or of the environment.

**4.1.10** The Contractor must take all measures necessary to ensure effective communication of health and safety information. When they arrive on the premises, all workers must be informed of any special features of the prevention program, as well as their obligations and their rights. The Contractor must maintain a log of information provided and obtain a signature from every worker who is given the information.

The Contractor must inform its workers that they have the right to refuse any work which might constitute a hazard to their health or safety.

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- 4.1.11 The Contractor must inspect the work site and submit, at the request of the building technical officer, a duly completed work site inspection sheet every week or at an interval determined with the building technical officer on the call-up form.
  - 4.1.12 The Contractor must promptly take such measures as are needed to correct instances of non-compliance with statutes and regulations and hazardous situations identified by a government inspector, the building technical officer or the PWGSC health and safety coordinator, or in the course of a periodic inspection. Submit to the building technical officer written confirmation of all measures taken to correct non-compliance or hazardous situations.
  - 4.1.13 The Contractor must provide first aid in compliance with applicable standards and any other clause of these specifications.
  - 4.1.14 The Contractor must review the building and facility evacuation procedure and provide its employees with the training and information they need to apply the procedure.
  - 4.1.15 The Contractor must mark off and control access to the work area and install barricades as needed.
  - 4.1.16 The Contractor must take all measures necessary to keep the workplace clean and orderly throughout the work, and must ensure that the workplace is free of any hazards at the end of each workday.
  - 4.1.17 When a worker works alone in an isolated place where it is impossible to ask for assistance, the Contractor must identify the risks related to the situation and provide the building technical officer with a procedure for preventing those risks and quickly getting help in an emergency.
  - 4.1.18 Where a hazard not identified in the specifications arises as a result of or in the course of the work, the Contractor must stop work immediately, implement temporary protective measures for workers and the public, and notify the departmental representative orally and in writing. The Contractor must then submit the necessary modifications for approval before proceeding with the prevention program, so that work can continue safely.
  - 4.1.19 In the event of an incident, the Contractor must take such measures as are needed, including stoppage of work, to ensure the health and safety of workers and the public and must contact the technical officer promptly.
  - 4.1.20 Sub-contracting is not permitted without special authorization from the building technical officer. In making the decision, the building technical officer will consider the subcontractor's ability to meet these requirements.
  - 4.1.21 On the worksite, the Contractor must consider the following conditions in developing a safe work plan:
    - 4.1.22 If the Contractor is asked to do work that is likely to produce asbestos dust, the Contractor must meet the requirements of section 3.23 of the Safety code for the construction industry, made under the *Act respecting occupational health and safety* (R.S.Q., c. S-2.1).
    - 4.1.23 If the Contractor is asked to do work at heights in the building, the Contractor must indicate in its prevention program the measures to be taken to prevent falls.
    - 4.1.24 The Contractor may be asked to do work near a body of water or holding pond. The Contractor must indicate in its prevention program the measures to be taken to prevent the risk of drowning, electric shock and electrocution.
    - 4.1.25 If the Contractor is asked to inspect or check electrical rooms, the Contractor must indicate in its prevention program the measures it plans to take to protect people in those areas.

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**4.1.26** If the Contractor is asked to do work in confined spaces, the Contractor must include in its prevention program the measures it intends to take when working in these areas and take into account the requirements of section 3.21 of the Safety code for the construction industry, in the *Act respecting occupational health and safety*, (R.S.Q., c. S-2.1).

**4.1.27** If the Contractor is asked to do work in laboratories, the Contractor must contact the building technical officer to determine whether special procedures need to be observed.

**4.1.28** In addition to all of the above, the Contractor must:

1. Provide a list of all products used in the project upon request;
2. Have at its disposal the parts and equipment required for the work described in these specifications;
3. Have in inventory at the shop or in service trucks the basic materials and tools needed to perform most of the work contained in these specifications;
4. Use new apparatuses, parts and materials that are free of defects;
5. For new installations, use apparatuses, parts and materials specified by the Departmental Representative.

## **4.2 SAFETY DATA SHEETS – SDS (WHMIS 2015)**

**4.2.1** Hazardous materials must be transported to the work site in their original containers. Each container shall include a label that complies with Workplace Hazardous Materials Information System (WHMIS) requirements. Storage of pesticide products is not permitted in PWGSC owned or operated facilities.

**4.2.2** All chemicals, such as cleaning products, varnishes, paints, solvents, coatings, gases and any other toxic products are considered hazardous products.

**4.2.3** Before starting work, submit for the Departmental Representative's approval all safety data sheets (SDSs) for hazardous products. The sheets must meet the requirements of the Workplace Hazardous Materials Information System (WHMIS 2015):

1. Product identification;
2. Hazard identification;
3. Composition/information on components;
4. First aid;
5. Fire-fighting measures;
6. Accidental release measures;
7. Handling and storage;
8. Exposure controls/personal protection;
9. Physical and chemical properties;
10. Stability and reactivity;
11. Toxicological information;
12. Ecological;
13. Disposal considerations;
14. Transport information;
15. Regulatory information;
16. Other information.

**4.2.4** Upon the Departmental Representative's request, be able to provide the safety data sheets (SDS) for the products used.

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- 4.2.5 Keep at the worksite a binder with all SDSs for products used on site; the SDSs must be updated as needed.
  - 4.2.6 Provide the Departmental Representative with documents proving workers have taken WHMIS 2015 training.

Example of an SDS in French:

[https://www.csst.qc.ca/prevention/reptox/simdut-2015/guide-utilisation-fiche-donnees-securite/Pages/24-exemple-fds.aspx?\\_ga=2.236168900.430740398.1604605383-686866387.1573666632](https://www.csst.qc.ca/prevention/reptox/simdut-2015/guide-utilisation-fiche-donnees-securite/Pages/24-exemple-fds.aspx?_ga=2.236168900.430740398.1604605383-686866387.1573666632)

## 4.3 PARTICULAR CLAUSES

### 4.3.1 LOCKOUT-TAGOUT

- 4.3.1.1 For all work on electrically or otherwise energized equipment, the Contractor shall draw up and implement a general lockout-tagout procedure and submit it to the Departmental representative.
- 4.3.1.2 Supervisors and all workers concerned by work requiring lockout-tagout must have received training on lockout-tagout procedures by a recognized organization; Contractor shall submit training certificates to the Departmental representative.
- 4.3.1.3 Before starting the lockout-tagout procedure of a piece of equipment on an occupied site, Contractor must coordinate his work with the representative of the site if the interruption of the power sources can have an impact on the operations of the site or on its occupants.
- 4.3.1.4 Contractor must designate a qualified person as responsible for the lockout-tagout and must make sure that that person prepares a lockout-tagout data sheet for each piece of equipment involved. The lockout-tagout data sheet must be submitted to the Departmental representative at least 48 hours before the beginning of the work. The Departmental representative will review the data sheet with the representative of the site if the work takes place in an existing building. The data sheets for lockout-tagout must contain at least the following information:
  - 1. description of work to carry out;
  - 2. identification, description and location of the circuit and/or ~~piece of~~ equipment to lockout-tagout;
  - 3. identification of energy sources that feeds the equipment;
  - 4. identification of each cut-out point;
  - 5. sequence of lockout-tagout and the release of residual energy as well as the sequence of unlocking;
  - 6. list of material needed for the lockout-tagout;
  - 7. method of verification of zero energy implementation;
  - 8. name and signature of the person who prepared the data sheet.

When required by the Departmental representative, Contractor must record all this information on the site's representative form.

- 4.3.1.5 At the time of lockout-tagout, the person responsible must date the data sheet and ensure that each worker involved in the work on the circuit/equipment to lockout-tagout puts his name on the data sheet and signs it.

### 4.3.2 ELECTRICAL WORK

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- 4.3.2.1 Contractor shall ensure that all electrical work is executed by qualified employees in accordance with the provincial regulation respecting vocational training and qualification.
  - 4.3.2.2 Contractor shall respect all requirements of standard CSA Z462 *Workplace Electrical Safety Standard*.
  - 4.3.2.3 No repairs or alterations shall be carried out on any live equipment except where complete disconnection of the equipment is not feasible.
  - 4.3.2.4 Contractor shall respect all requirements prescribed in paragraph "LOCKOUT-TAGOUT" in this section.
  - 4.3.2.5 Contractor shall advise in writing the Departmental representative of all the work that cannot be done with de-energized equipment and obtain his authorization. Contractor shall demonstrate to the Departmental representative that it is impossible to do the work with de-energized equipment and provide all the information necessary to request and obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimeter, protective equipment, etc.) before the beginning of the work, excluding for the exceptions indicated in standard CSA Z462 *Workplace electrical safety*.
  - 4.3.2.6 The energized electrical work permit on must contain at least the following elements:
    - a. description of the circuit and equipment and its location;
    - b. justification for having to do the work in an energized condition;
    - c. description of safe work practices to apply;
    - d. results of the shock hazard analysis;
    - e. limit of the protective perimeter against electric shocks;
    - f. results of the arc flash hazard analysis;
    - g. description of the arc flash protection boundary;
    - h. description of the personal protective equipment required;
    - i. description of the means to limit access to unqualified persons;
    - j. proof that an information session has been carried out;
    - k. approval signature of the energized electrical work (by a person in authority or by the owner).
  - 4.3.2.7 If for the operational requirements of the occupants of the site the representative of the site requires that the Contractor performs work in an energized condition, the Contractor shall obtain all the information required to request and obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimeter, protective equipment, etc.) and have it signed by the representative of the site assigned by the Departmental representative before the beginning of the work.

In addition to the requirements indicated in the paragraphs above, the Contractor must comply with the requirements of standard CSA Z462 *Workplace Electrical Safety Standard*.

### **4.3.3 ASBESTOS EXPOSURE**

- 4.3.3.1 It is not anticipated that the work covered by the present specifications involves the manipulation of materials containing asbestos; however, if the Contractor or the Departmental representative or his agent discover materials which are susceptible of containing asbestos, the Contractor must immediately stop the work and advise the Departmental representative. If more investigation demonstrates that the materials do contain asbestos, the Contractor shall comply with the following requirements.

Prior to starting any work likely to emit asbestos dust, the Contractor must:

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1. Provide a written procedure for the work, identifying the risk level of the work (low, moderate, high), as defined in section 3.23 of the *Code de sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry). This procedure must take into account all the requirements of that section 3.23.
  2. Submit certificates that demonstrate that all workers involved in the work have received training on asbestos hazards and on the procedure required in the preceding paragraph.
  3. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

#### **4.3.4 FALL PROTECTION**

- 4.3.4.1 The Contractor must provide the equipment needed to work at heights (ladders, stepladders, elevating platforms, scaffolding, etc.).
- 4.3.4.2 Plan and organize work so as to eliminate the risk of fall at the source or ensure collective protection, thereby minimizing the use of personal protective equipment. When personal fall protection is required, workers must use a safety harness that complies with CSA standard CAN/CSA Z-259.10 M90. A safety belt must not be used as fall protection.
- 4.3.4.3 Every person using an elevating platform (scissors, telescopic mast, articulated mast, rotative mast, etc.) must have a training regarding this equipment.
- 4.3.4.4 The use of a safety harness is mandatory for all elevating platforms with telescopic, articulate or rotative mast.
- 4.3.4.5 Define the limits of the danger zone around each elevating platform.
- 4.3.4.6 All openings in a floor or roof must be surrounded by a guardrail or provided with a cover fixed to the floor able to withstand the loads to which it could be exposed, regardless of the size of the opening and the height of the fall it represents.
- 4.3.4.7 Everyone who works within two metres from a fall hazard of three metres or more must use a safety harness in accordance with the requirements of the regulation, unless there is a guardrail or another device offering an equivalent safety.
- 4.3.4.8 Despite the requirements of the regulation, the Departmental representative may require the installation of a guardrail or the use of a safety harness for specific situations presenting a risk of fall less than three metres.

#### **4.3.5 CONFINED SPACES**

In addition to the requirements of the provincial regulation applicable to confined spaces, the Contractor must respect the requirements in the following paragraphs.

The Departmental representative reserves the right, depending on the nature of the risk of the confined spaces, of the work to be done and/or of the level of competence in confined spaces demonstrated by the Contractor, to require from the latter that he use the services of a firm specialized in health and safety or in confined space work to perform the analysis of the risks inherent to the confined spaces, to complete the entry permit, to conduct surveillance of the work or for any other task related to the work in confined spaces.

- 4.3.5.1 **Information on confined spaces existing on the construction site.**

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The list of confined spaces will be provided to you on request.

#### 4.3.5.2 Person in charge of the health and safety for the work in confined spaces

The Contractor shall designate a person to be in charge of the health and safety for the work in confined spaces. This person shall be qualified, as defined in the article 297 of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Occupational Health and Safety Regulation). This person must be present at all times during work in confined spaces and must make sure that all the requirements of the regulation and the ones specified in this section are respected. This person must amongst other things fill out and issue the entry permit for the confined spaces.

#### 4.3.5.3 Training

1. All persons having access to a confined space, including the person in charge and the watcher of the confined space shall have completed training on entry in confined spaces.
2. All persons who have to use supplied-air respirator to access the confined spaces shall have completed training on the use of these apparatus.
3. All persons identified as rescuers for confined spaces shall have completed training on confined spaces rescue.
4. Each training required in the preceding paragraphs must be provided by a firm specialized in health and safety or in confined spaces.
5. The training certificates of the persons mentioned above must be submitted to the Departmental representative before the beginning of the work in confined spaces.

#### 4.3.5.4 Risk assessment of confined spaces

4.3.5.4.1 For each of the confined spaces listed at the beginning of this article, the Contractor must obtain the necessary information from the site representative and proceed to the assessment of the risk inherent to each confined space and relative to:

1. the prevailing internal atmosphere, namely the concentration of oxygen, inflammable gases and vapours, combustible or explosive dusts as well as the categories of contaminants likely to be present in this enclosed area or nearby;
2. the fact that the natural or mechanical ventilation is insufficient;
3. The materials that are present there and that can cause the worker to sink, to be buried or to drown, such as sand, grain or a liquid;
4. the interior configuration;
5. pipes and conduits penetrating the confined space;
6. energies such as electricity, moving mechanical parts, heat stress, noise and hydraulic energy;
7. ignition sources such as open flames, lighting, welding and cutting, static electricity or sparks;
8. all other particular circumstances, such as the presence of vermin, rodents or insects;

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4.3.5.4.2 These risk assessments must be done by the person in charge of the health and safety of the work in confined spaces. They must be submitted to the Departmental representative for analysis at least 10 days before the proposed date for the work in confined spaces and they must also include the following information:

1. location of the confined space;
2. description of the confined space;
3. dimensions of the confined space;
4. number, location and dimensions of the openings;
5. date of the assessment;
6. name and signature of the person who conducted the assessment and the name of his employer.

4.3.5.4.3 The Contractor must repeat the same process for each of the confined spaces that he will build/install during this project.

#### 4.3.5.5 **Confined spaces entry permits**

4.3.5.5.1 For each confined space to which the Contractor must have access, the Contractor must include in its prevention program a written procedure identifying the following:

1. The tools needed to perform the work;
2. The equipment installed or to be installed in the confined space and the measures to be taken to install, use, maintain, protect or move the equipment;
3. Pipes and conduits entering the confined space;
4. The hazards and safety measures to be taken depending on the work to be performed;
5. Contaminants that might be encountered in the confined space;
6. Appropriate rescue measures and equipment and emergency measures.

4.3.5.5.2 The Contractor must send to the departmental representative for analysis, at least five days before the work in confined spaces is scheduled to begin, a copy of each confined space entry permit for the spaces it must access. The entry permits must be completed by the person responsible for health and safety regarding work in confined spaces and must include, at the minimum, the following information:

1. a description of the work to be performed and the work method;
2. a description of the hazards and corresponding control measures based on the results of the confined space hazard assessment made in advance and based on the inherent hazards of the work to be performed;
3. the safety equipment to be used to control the confined space hazards (e.g., ventilator, gas detector, local exhaust ventilation, personal protective equipment, etc.);
4. the rescue procedure consisting of, at a minimum:
  - a. a means of communication between the confined space monitor and the workers in the confined spaces;
  - b. the rescue equipment specific to each confined space;
  - c. confirmation that the municipal emergency response service has been made aware of the confined space work to be performed specifically on this site and that it may intervene to carry out a confined space rescue; otherwise, the Contractor must designate site workers who will act as rescue persons in the event these

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- rescue persons must enter the confined space (mandatory rescue training);
  - d. the location of the telephone and the telephone number of the municipal emergency response service (if applicable).
5. the date of the entry permit;
  6. the name of the person who issued the permit and the name of the employer;
  7. the name of the supervisor and the name of the employer;
  8. the names of the workers who must enter the confined space and the names of their employers.

In the event that the site representative requires the use of a confined space entry permit specific to its site, the Contractor must comply with the requirements of that permit.

**4.3.5.6 All persons who have access to a confined space, including the custodian, must hold the following training certificates:**

1. PWGSC safe work in confined spaces (ASP Construction or equivalent course);
2. Workplace first aid and CPR (organization recognized by the CSST);
3. Use of ventilation devices (ASP Construction or equivalent course);
4. Use of safety harnesses (ASP Construction or equivalent course);
5. Use and maintenance of respiratory protection devices (ASP Construction or equivalent course);
6. Gas detection devices (ASP Construction or equivalent course);
7. Where the use of supplied-air or self-contained respirators is planned, full training in the preparation, maintenance and use of the devices (manufacturer, supplier or recognized organization) is required;
8. In remote areas where there is no local emergency response unit, the Contractor must designate persons to carry out rescue operations in confined spaces. The rescuers designated by the Contractor must complete relevant training in the use of rescue equipment.

**4.3.5.7 Medical surveillance**

- 4.3.5.7.1 The Contractor must submit to the Departmental representative a medical certificate dated in the last two years for all persons who must use a supplied-air respirator. The certificate must confirm the ability of each person to use this type of apparel.
- 4.3.5.7.2 It is recommended that the persons who have to work in sewer collection systems or other similar systems be vaccinated against diphtheria, tetanus and hepatitis "B".
- 4.3.5.7.3 Vaccination against diphtheria and tetanus is strongly recommended for work in confined spaces.
- 4.3.5.7.4 The Contractor must establish an emergency and rescue procedure with municipal and ambulance services. The procedure, telephone numbers and location of the nearest telephone must be clearly posted near the work location.

**4.3.5.8 Requirements while working in confined spaces**

- 4.3.5.8.1 Before each entry into a confined space, the person in **charge** of the health and safety for the work in confined spaces shall take readings of oxygen concentration, flammable gases and all toxic gases likely to be present and record these readings on the entry permit required earlier.

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- 4.3.5.8.2 No worker can access the confined space if the following requirements are not respected:
- a) the concentration of oxygen shall be greater than or equal to 19.5% and less than or equal to 23%;
  - b) the concentration of inflammable gases or vapours shall be less than or equal to 10% of the lower explosion limit;
  - c) the concentration of other gases must not exceed the standards prescribed in annex I of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Occupational Health and Safety Regulation).
- 4.3.5.8.3 If the oxygen and gas concentrations measured respect the regulatory values, the person in charge of the health and safety for the work in confined spaces must ensure that all preventive measures indicated on the permit are in place and then must complete the entry permit (date, time, signatures, etc.) before issuing the permit and allow entry into the confined space.
- 4.3.5.8.4 A permit is only valid for one work shift; the Contractor must submit a new permit for each extra shift.
- 4.3.5.8.5 During the work inside the confined space, the gas concentration must be measured continuously, and the gas detector must be installed at the level of the breathing area of the workers. If the conditions inside the confined space are such that the workers might not hear/see the detector's alarm, the Contractor must find a way for the confined space safety watcher to watch the concentration measures while maintaining the measurements at the level of the breathing zone of the workers.
- 4.3.5.8.6 If the work is organized in a way that the workers are scattered far away from each other in a large confined space, the Contractor needs to provide additional gas detectors.
- 4.3.5.8.7 The Contractor must provide the gas detectors and maintain them in good condition. He must be able to show that the gas detectors used have been calibrated and adjusted by the person in **charge** of the health and safety for the work in confined spaces or by a qualified person, in accordance with the manufacturer's recommendations. The Departmental representative can at all times have the accuracy of the measuring devices checked. In the event of the failure of a detection device, the work must be stopped immediately, and all workers must leave the confined space.
- 4.3.5.8.8 The manufacturer's manual of the gas detectors must be available on the construction site.
- 4.3.5.8.9 The Contractor shall provide a ventilation system to keep concentrations of contaminants below the regulatory limits.
- 4.3.5.8.10 If work generating contaminants are performed (welding, use of products, etc.), the Contractor must, if needed, install an aspiration system for the contaminants so that the regulatory values of air quality can be maintained at all times.
- 4.3.5.8.11 If a detecting device alarm goes off, all workers shall leave the confined space. The measured levels of concentration must then be recorded on the entry permit. The Contractor shall then find the source of contamination, neutralize it, ventilate the confined space to eliminate contaminant residues and authorize access to the confined space only when concentrations of oxygen and gas have returned to normal.

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- 4.3.5.8.12 Compressed gas cylinders or welding equipment shall not be brought into confined spaces: this equipment shall remain outside and shall not block entrances or exits; all cylinders shall be properly secured.
- 4.3.5.8.13 Tools and electrical devices used to work in the confined spaces shall be grounded and, when necessary, designed to be explosion-proof. All equipment must be connected to a ground fault interrupter outlet or to a step-down transformer. The Contractor shall, at his own cost, hire a qualified electrician to adjust power receptacles and/or circuit breakers that he intends to use which do not meet these criteria.
- 4.3.5.8.14 The Contractor shall obtain a Hot Work Permit and respect the requirements to that effect when the work to be carried out includes hot work.
- 4.3.5.8.15 The Contractor must assign a competent person to assume the duties of confined space safety watcher. The supervisor shall be exclusively dedicated to these duties and must constantly remain outside of the confined space as long as there is a worker in it. He must also:
- a) ensure that the entry permit has been filled, signed and posted near the confined space;
  - b) be familiar with the work procedure specific to the confined space and ensure that it is respected;
  - c) ensure continuous communication with all the workers in the confined space and ensure that all the equipment required in case of emergency is present;
  - d) have a good knowledge of the ~~backup~~ ventilation systems and ensure their proper functioning for the duration of the work;
  - e) prevent access to unauthorized persons;
  - f) ensure that the conditions around the confined space zone is not a health or security risk for the workers inside the confined space;
  - g) initiate the emergency procedure if needed.
- 4.3.5.8.16 The same person may act as a confined space safety watcher and as the person in charge of the health and safety of the work in confined spaces, provided all requirements of both functions are met.

#### **4.3.6 HOT WORK**

- 4.3.6.1 Hot work means any work where a flame is used or a source of ignition may be produced, i.e., riveting, welding, cutting, grinding, burning, heating, etc.
- 4.3.6.2 Before the beginning of each shift of work and for each sector, the Contractor must obtain a "Hot Work Permit" emitted by the person responsible for the site.
- 4.3.6.3 A working portable fire extinguisher suitable to the fire risk shall be available and easily accessible within a 5 m radius from any flame, spark source or intense heat.
- 4.3.6.4 The Contractor must appoint an individual to do continuous monitoring of the fire risks for a period of one (1) hour after the end of the shift of hot work. This individual shall sign the

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section for this purpose on the permit and give it to the person in charge of the construction site after the one-hour period.

- 4.3.6.5 When the hot work is done in areas where there are combustible materials or where the walls, ceilings or floors are made of or covered with combustible materials, a final inspection of the work area must be scheduled four (4) hours after the work has finished. Unless specified otherwise by the Departmental representative, the Contractor must assign a person to carry out this monitoring.
- 4.3.6.6 The Contractor must designate a person to continuously monitor fire risks for a minimum period of one hour after the end of any hot work. This person must sign the section of the permit designated for this purpose and give it to the site authority after that hour has gone by.

#### 4.3.7 WELDING AND CUTTING

In addition to the requirements prescribed in the preceding paragraphs, the Contractor must respect the following requirements:

- 4.3.7.1 Welding and cutting work must be carried out in accordance with the requirements of the *Code de Sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the construction industry) and CSA standard W117.2, Safety in Cutting, Welding and Allied Processes.
- 4.3.7.2 Air extraction system with filters must be used for all welding and cutting work performed inside.
- 4.3.7.3 Stop all activities producing flammable or combustible gas, vapours or dust in the vicinity of the welding or cutting work.
- 4.3.7.4 Store all compressed gas cylinder on a fireproof fabric and make sure that the room is well ventilated.
- 4.3.7.5 Store all oxygen cylinders more than 6 metres from a flammable gas cylinder (ex: acetylene) or a combustible such as oil or grease, unless the oxygen cylinder is separated from it by a wall made of non-combustible material as mentioned in subsection 3.13.4 of the *Code de sécurité pour les travaux de construction, S-2, r. 6* (Safety code for the construction industry).
- 4.3.7.6 Store the cylinders far from all heat sources.
- 4.3.7.7 Not to store the cylinders close to the staircases, exits, corridors and elevators.
- 4.3.7.8 Do not put acetylene in contact with metals such as silver, mercury, copper and alloys of brass having more than 65% copper, to avoid the risk of an explosive reaction.
- 4.3.7.9 Check that welding equipment with electric arc has the necessary tension and are grounded.
- 4.3.7.10 Ensure that the conducting wires of the electric welding equipment are not damaged.
- 4.3.7.11 Place the welding equipment on a flat ground away from the bad weather.
- 4.3.7.12 Install fireproof canvas when the welding work is done in a superposition and where there is the risk of falling sparks.
- 4.3.7.13 Move away or protect the combustible materials which are closer than 15 metres from the welding work.

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4.3.7.14 Prohibition to weld or cut any closed container.

4.3.7.15 Do not perform any cutting, welding or work with a naked flame on a container, a tank, a pipe or other container containing a flammable or explosive substance unless:

- ✓ They have been clean and air samples have been taken indicating the absence of explosive vapours; and
- ✓ Arrangements have been made to ensure the safety of workers.

**End of document**