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K1A 0S5

Bid Fax: (819) 997-9776

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

This document contains a security requirement.

**Vendor/Firm Name and Address**

Raison sociale et adresse du  
fournisseur/de l'entrepreneur

**Issuing Office - Bureau de distribution**

Infrastructure Maintenance and Solution Services

Division (FK)

L'Esplanade Laurier,

East Tower 4th Floor

L'Esplanade Laurier,

Tour est 4e étage

140 O'Connor, Street

Ottawa

Ontario

K1A 0R5

<b>Title - Sujet</b> Generator Maintenance	
<b>Solicitation No. - N° de l'invitation</b> EJ196-200493/B	<b>Amendment No. - N° modif.</b> 001
<b>Client Reference No. - N° de référence du client</b> 20200493	<b>Date</b> 2021-07-21
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$FK-280-80176	
<b>File No. - N° de dossier</b> fk280.EJ196-200493	<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 2021-08-17</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 checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Grogan, Lynn	<b>Buyer Id - Id de l'acheteur</b> fk280
<b>Telephone No. - N° de téléphone</b> (613) 296-2961 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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## Amendment 001

**1) Delete 4.1.1.3 Certified Petroleum Mechanic and replace with;**

**4.1.1.3 Certified Petroleum Mechanic**

The Bidder must provide the name of each **Certified Petroleum Mechanic**:

	First and Last Name
<b>Certified Petroleum Mechanic</b>	

The following certificates/cards must be provided for the **Certified Petroleum Mechanic** proposed by the Bidder. Each of the certificates/cards must be valid (not expired) as of the bid closing date of this RFP.

-A valid Ontario Petroleum license - PM 2 for underground fuel storage systems & PM 3 for above ground systems

**OR**

- A valid diploma or certification from a recognized post-secondary institution as a as a PM2 & PM3 (or equivalent) in the applicable province (other than Ontario and Québec) or territory to install or maintain above and/or underground fuel storage systems.

**2) Delete 4.1.1.6 Certified Infrared Thermographer and replace with;**

**4.1.1.6 Certified Infrared Thermographer**

To carry out the work on this requirement, the Bidder must provide one (1) **Certified Infrared Thermographer** to perform maintenance of Emergency Electrical Power Supply Systems.

The Bidder must provide the name of each **Certified Infrared Thermographer**:

	First and Last Name
<b>Certified Infrared Thermographer</b>	

The following certificates/cards must be provided for the **Certified Infrared Thermographer** proposed by the Bidder. Each of the certificates/cards must be valid (not expired) as of the bid closing date of this RFP.

- A valid certificate of training from an Inter-National Electrical Testing Association (NETA) accredited course in Infrared Level II or III Thermography.

**3) Delete Annex A, Statement of Work and Replace with attached Annex A, Statement of Work dated July 20, 2021.**

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

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## **PART 1 GENERAL**

### **1.1 Definitions**

#### 1.1.1 Actions

- 1.1.1.1 Checking/Check: visual observation to ensure the device or system is in place and is not damaged or obstructed.
- 1.1.1.2 Inspecting/Inspection: physical examination to determine that the device or system will perform in accordance with its intended function.
- 1.1.1.3 Testing/Test: full operation of a device or system to ensure that it will perform in accordance with its intended operation or function.
- 1.1.1.4 Maintaining/Maintenance: routine recurring work; checking, inspecting, testing & service required to keep the components, sub-systems, system and integrated systems as identified in Part 3 – Equipment Inventory, in such condition that they may be continuously utilized, at their original or designed capacity and efficiency for their intended purpose.
- 1.1.1.5 Service: to make fit for use, adjust, or maintain in order to keep the equipment identified in Part 3 – Equipment Inventory, in an operational condition as per their original design intent.
- 1.1.1.6 Service Call: onsite diagnosis and correction made by a qualified person as outlined in 1.4.3 – Service Call.
- 1.1.1.7 Thermographic Survey: performing a survey with thermographic equipment.

#### 1.1.2 Equipment

- 1.1.2.1 Thermographic Equipment: Equipment capable of :
  - 1) detecting temperature ranges up to 500 Celsius
  - 2) showing differential temperature
  - 3) producing quality of images of 3 Mega pixel or better
  - 4) accuracy of image +/- 2%

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- 5) showing on site, the actual event via LCD screen at the request of the Technical Authority
- 6) displaying in Colour
- 7) file type JPEG or BMP for pictures of actual equipment showing, grey and white, Thermal Fusion and normal view on display screen.
- 8) 24 Degree optics as a minimum

1.1.3 Individuals

1.1.3.1 Qualified Person:

- 1) Someone who is in possession of a valid and recognized Canadian university or college degree, certificate, license, manufacturer-specific training/certification or professional standing. The university or college must have a provincial or territorial degree-granting status.

and

- a) Someone having the appropriate training from/by the OEM or an established service provider bidding on this solicitation.

and

- b) Someone having the appropriate minimum of five years of experience in the related field.

1.1.3.2 Electrician: someone who is in possession of a valid Certificate of Qualification (C of Q) at the Journeyman level in the province that the work is to be performed.

1.1.3.3 Master Electrician: an individual who is licensed under the Ontario Electricity Act, Regulation 570/05 to assume the responsibilities for the carrying out of electrical work on behalf of an electrical Contractor.

1.1.3.4 Diesel Engine Technician: someone who holds the appropriate minimum five years of experience and training with diesel engines and generator systems, and

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who is capable of performing the diesel-related tasks described within this Statement of work.

OR

- 1.1.3.5 Certified Generator System Technician: someone who holds a valid and recognized Canadian university or college degree, certificate, license, manufacturer specific training / certification or professional standing. The university or college must have a provincial or territorial degree-granting status. (Exception is made for the EGSA course)

and

Have the appropriate training from / by the OEM or an established service provider bidding on this solicitation with the appropriate minimum of five years of experience in the related field.

- 1.1.3.6 Petroleum Mechanic: an individual who is in possession of a valid Ontario Petroleum license - PM 2 for underground tank systems and PM 3 for above ground systems.
- 1.1.3.7 Transfer Switch Technician: someone who holds the appropriate minimum five years of experience and training with transfer switches and who is capable of performing the related tasks described within this Statement of work.
- 1.1.3.8 Infrared Thermographer: an individual who is in possession of a Inter-National Electrical Testing Association (NETA) accredited Infrared Level II or III Thermography Certificate.
- 1.1.3.9 Field Service Technician: an individual who is trained and qualified to test & maintain power apparatus equipment, including breakers, switchgear & relays and who is capable of performing the related tasks described within this Statement of work. Must have access to the appropriate test set(s)

## **1.2 Codes, Standards, Regulations and Requirements**

### 1.2.1 General

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- 1.2.1.1 The Contractor must comply with all Codes, Standards, Regulations and Requirements listed in this section.
- 1.2.1.2 The Contractor must keep within his possession a copy of the most current edition of the applicable Codes, Standards, Regulations and Requirements in force at the time of entering into the Statement of Work for the duration of the Contract.
- 1.2.1.3 In the event that concurrent documents exist, the most stringent set of Codes, Standards, Regulations and Requirements must apply.
- 1.2.1.4 In the event of a change in the Codes, Standards, Regulations and Requirements related to this Statement of Work, the contractor must inform the Technical Authority.
- 1.2.2 National, Provincial and/or Territorial Codes
  - 1.2.2.1 National and Provincial Building Codes - As they pertain to the installation, verification and maintenance of Emergency Power Supply Systems.
  - 1.2.2.2 National and Provincial Fire Codes - As they pertain to the installation, verification and maintenance of Emergency Power Supply Systems.
  - 1.2.2.3 National and Provincial Electrical Safety Codes - As they pertain to the installation, verification and maintenance of Emergency Power Supply Systems.
  - 1.2.2.4 National and Provincial Health & Safety Codes - As they pertain to the works undertaken on site.
- 1.2.3 Standards
  - 1.2.3.1 Canadian Underwriters Laboratories of Canada (CAN/ULC) Standards
    - 1) CAN/ULC/ORD - C58.12.92 - Leak detection devices (volumetric type) for underground flammable liquid storage tanks

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- 2) CAN/ULC/ORD - C58.14.92 - Non Volumetric leak detection devices for underground flammable liquid storage tanks.
- 3) CAN/ULC-S1001-11 – Standard for Integrated Systems Testing of Fire Protection and Life Safety

1.2.3.2 Canadian Standards Association (CSA) Standards

- 1) CSA C282 - Emergency electrical power supply for buildings
- 2) CSA C22.1 – Canadian Electrical Code
- 3) CSA Z460 - Control of hazardous energy - Lockout and other methods
- 4) CSA Z462 - Workplace Electrical Safety (Arch Flash Protection)
- 5) CSA-B 139 - Installation code for oil-burning equipment

1.2.3.3 National Fire Protection Association (NFPA) Standards

- 1) NFPA70 B – Recommended practice for electrical equipment maintenance.

1.2.4 Health and Safety

1.2.4.1 *Canada Labour Code Part II*, Canada Occupational Safety and Health Regulations

1.2.4.2 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

1.2.4.3 Material Safety Data Sheets (MSDS)

1.2.5 Other required Codes, Standards, Regulations and Requirements

1.2.5.1 Canadian Environmental Protection Act (CEPA) 1999 - Canadian Environmental Protection Act 1999, Hazardous Waste Regulation

- 1.2.5.2 Canadian Environmental Protection Act (CEPA) 2008-197 - Regulations for Storage tank systems for petroleum products and allied petroleum products.
- 1.2.5.3 InterNational Electrical Testing Association (NETA) Maintenance and testing specifications for electrical power distribution equipment and systems
- 1.2.5.4 Canadian Council of Ministers of the Environment (CCME) - PN 1326 - Environmental code of practice for aboveground and underground storage tank systems containing petroleum and allied petroleum products
- 1.2.5.5 The Technical Standards and Safety Act (TSSA) 2000, Ontario Regulation 215/01 TSSA - Ontario Region Requirement.
- 1.2.5.6 Provincial
  - 1) Provincial Environmental Protection Act Ex.- Ontario- R.R.O. 1990 Regulation 347 Waste Management.
  - 2) The Ontario Electricity Act 1998 – Ont. Regulation 570/05 Ontario Collage of Trades and Apprenticeship Act 2009 – S.O. 2009, Chapter 22 Ontario Ministry of Training, Colleges and Universities – Trade Certifications.
  - 3) Ontario Health and Safety Act and its associated regulations.

### **1.3 Submittals**

#### 1.3.1 Fees, Permits and Certificates

- 1.3.1.1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificate. Provide inspection certificates as evidence that work conforms to the requirement of the Authority having Jurisdiction.
- 1.3.1.2 Electrical Inspection Permits

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- 1) The Contractor is responsible to provide electrical inspection permits for all electrical work prior to the electrical work taking place. Refer to the National, Provincial or Territorial electrical codes as per 1.2 – Codes, Standards, Regulations and Requirements.
- 2) If an electrical inspection permit is not required, it is the Contractor's responsibility to provide a letter from the Electrical Safety Authority (ESA) confirming that the contractor is not required to provide electrical inspection permits for that specific work.

### 1.3.2 Site/Work Specific Implementation Plan

1.3.2.1 The Contractor must submit a detailed, site/work specific, implementation plan to the Technical Authority twenty working days prior to the commencement of work as identified in the Statement of Work.

- 1) The site/work specific, implementation plan must include:
  - a) A detailed site specific, inspection schedule.
  - b) A detailed work plan and Sequence of operation for the Annual inspection including the installation plan for a load bank if applicable.
  - c) The site-Specific Health and Safety Plan.
  - d) Hazardous Waste Management Plan
  - e) Samples of relevant inspection checklists.
  - f) Sample of a relevant Thermographic report.
- 2) As part of the site/work specific, implementation plan the contractor must perform:
- 3)
  - a) A site-specific safety hazard assessment;
  - b) A health and safety risk/hazard analysis for site tasks and operations found within the implementation plan
  - c) A Hazardous Waste Audit

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- 1.3.2.2 The Technical Authority will review Contractor's, site/work specific implementation plan and provide comments to the Contractor within ten working days after the receipt of plan.
- 1.3.2.3 The Contractor must revise the site/work specific implementation plan as appropriate and resubmit the plan to the Technical Authority within ten working days after receipt of comments.
- 1.3.2.4 The Technical Authority's review of the Contractor's detailed site/work specific implementation plan should not be construed as final and does not reduce the Contractor' overall responsibility for providing the personnel required in the implementation plan.
- 1.3.2.5 The Technical Authority reserves the right to amend the site/work specific implementation plan at any time due to operational requirements and must sign off on all amendments to the plan, in consultation with the Contractor.
- 1.3.3 Site-Specific Inspection schedule
- 1.3.3.1 As part of the site/work specific, implementation plan, and every subsequent year after, the Contractor must submit to the Technical Authority a detailed site specific, inspection schedule.
- 1) The schedule must include the additional monthly, semi-annual and annual requirements as defined in Part 2 – Execution.
- 1.3.3.2 The Technical Authority's review of Contractor's annual detailed inspections schedule should not be construed as final and does not reduce the Contractors' overall responsibility for providing the required personnel on the scheduled inspection dates.
- 1.3.3.3 The Technical Authority reserves the right to amend the inspection schedule at any time due to operational requirements and must sign off on all amendments to the plan, in consultation with the Contractor.
- 1.3.3.4 In the event of a cancellation or a rescheduling that affects the completion of the work, if the Contractor has not been provided with a 2 hours cancellation notification prior to the original start time, the Contractor must be paid a

maximum of a 3 hour service call as per Pricing Schedule 2, billable hourly rates for each individual sent to site.

#### 1.3.4 Work Plan and Sequence of Operation for the Annual inspection

1.3.4.1 As part of the site/work specific, implementation plan the Contractor must submit to the Technical Authority, a detailed work plan including a sequence of operation for all of the events covered under the Annual inspection. This work plan must include but is not limited to:

- 1) Lockout-Tag out procedures
- 2) Site-Specific Electrical Inspection Procedures
- 3) Isolation & Re-energization Procedures
- 4) Spill Containment Procedures
- 5) Quantities of Hazardous Waste Products to be produced during the Annual inspection.

1.3.4.2 The Technical Authority reserves the right to amend the Work Plan at any time due to operational requirements and must sign off on all amendments to the plan, in consultation with the Contractor.

#### 1.3.5 Health and Safety

##### 1.3.5.1 Site-Specific Health and Safety Plan

- 1) As part of the site/work specific, implementation plan, the Contractor must submit to the Technical Authority their site-specific Health and Safety Plan.
- 2) The Health and Safety Plan must include:
  - a) Results of site-specific safety hazard assessment.
  - b) Results of health and safety risk or hazard analysis for site tasks and operations found in work plan.
  - c) The Technical Authority's review of Contractor's final Health and Safety plan should not be construed as approved and does not reduce the Contractor' overall responsibility for Health and Safety.

1.3.5.2 Accident Report

- 1) The Contractor must submit to the Technical Authority within twenty-four hours of incident and/or accident reports of incidents and/or accidents that occur during the term of the Contract.

1.3.5.3 Correction – Health and Safety Issues

- 1) The Contractor must provide the Technical Authority within two working days with written report of action taken to correct non-compliance of Health and Safety issues.

1.3.5.4 Hazardous Material (WHMIS-MSDS)

- 1) The Contractor must submit any and all Workplace Hazardous Materials System (WHMIS) Material Safety Data Sheets (MSDS) for Hazardous Materials used on site to the Technical Authority five working days before such materials are brought to site.

1.3.6 Logbooks

1.3.6.1 The Contractor is responsible for supplying and completing the CSA C282 Logbook or Technical Authority approved equivalent. Logbooks are to be kept in the emergency power supply room. The logbook must be used to record the work performed at each visit and identify parts and materials used.

1.3.6.2 The completed original logbooks must be submitted to the Technical Authority and become the property of Canada.

1.3.7 Inspection Checklists

1.3.7.1 Sample checklists are available from the Technical Authority upon request.

1.3.7.2 The Contractor is responsible for providing and completing the inspection checklists required by this Statement of Work. These inspection checklists must be in conformance with the minimum requirements defined by the applicable Codes, Standards and Regulations.

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- 1.3.7.3 Additional inspections, checks and tests, as identified in Part 2 – Execution, must also be included and recorded on the Contractor’s checklists.
- 1.3.7.4 The inspection checklists must be submitted to and approved by the Technical Authority as part of the site/work specific, implementation plan.
- 1.3.7.5 The checklists must be used to record the work performed at each inspection and must identify the specific tasks undertaken.
- 1.3.7.6 The completed checklists are to be kept in a vinyl hard cover 3 “D” ring type loose leaf binder for 212 mm X 275 mm size paper with the required logbooks in the emergency power supply room.
- 1.3.7.7 The completed original inspection checklists must be submitted to the Technical Authority and become the property of Canada.

1.3.8 Building Life Safety Compliance Testing Manual

- 1.3.8.1 Signature of personnel performing any of the identified checks, inspections or tests as outlined in this Statement of Work must be entered into the Building Life Safety Compliance Testing Manual.

1.3.9 Material Removal Records

- 1.3.9.1 The Contractor must submit to the Technical Authority records for all removals from site, for both materials designated for alternative disposal and general waste as defined by the Canadian Environmental Protection Act (CEPA) 1999, Hazardous Waste Regulation and other applicable provincial, municipal or territorial legislation.

1.3.10 Reports for Tests, Checks, Maintenance and Service

- 1.3.10.1 Monthly and Semi-Annual Reports
  - 1) A detailed and comprehensive signed computerized report of the monthly and semi-annual test procedures carried out, must be submitted to the Technical Authority within ten working days

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following the completion of the inspections, tests, checks, maintenance and service defined within this Statement of Work.

- 2) The report must include the major and minor deficiencies noted during the inspections, tests, checks, maintenance and service defined within this Statement of Work.

#### 1.3.10.2 Annual Report

- 1) A detailed and comprehensive signed computerized of the annual inspection report must be submitted to the Technical Authority no later than fifteen working days following the completion of the Annual inspection, tests, checks, maintenance and service.
- 2) The Annual Report must also include :
  - a) Major and minor deficiencies noted during the inspections, tests, checks, maintenance and service.
  - b) The Thermographic Report
  - c) The Liquid Analysis Report
  - d) The Fuel Oil Lab Report

#### 1.3.10.3 Fuel Oil Laboratory Report

- 1) The Contractor must ensure that the laboratory selected meets with the approval of the Technical Authority and is capable of analyzing the quality of the sample as per the requirements identified within the American Society for Testing and Materials (ASTM) Standard D4176 Specification for Diesel Fuel Oils.
- 2) The Contractor must submit a copy of the laboratory certification fifteen days prior to conducting the sample analysis.

#### 1.3.10.4 Thermographic Report

- 1) A detailed and comprehensive signed Thermographic report must be submitted to the Technical Authority with the Annual report. The Thermographic report must:

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- a) identify deficiencies and defects;
  - b) include signature in final report;
  - c) include images and photographs (file type JPEG or BMP) of actual equipment
- 2) The Thermographic report must also include:
- a) A photo of the Thermographic signature of defective equipment;
  - b) A photograph of same defective equipment;
  - c) Defective equipment identification and location in accordance with drawing.
  - d) The following information;

### **Thermographic Report**

#### **General**

Date	
Customer	
Location	
Area	
Component	

#### **Phase Load in Amps**

Phase A	
Phase B	
Phase C	
Neutral	

#### **IR Information Value**

Time of Creation	
Camera serial Number	

#### **Object Parameter Value**

Emissivity	
Object Distance	

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Actual Temperature	
Reference Temperature	
Rise above Reference	
Priority	

**Following actions**

Probable Cause	
Corrective action	
Date repaired	
Repaired by	
Comments	

1.3.10.5 Liquid Analysis Report

- 1) The Contractor must provide a liquid analysis report for the anti-freeze and lubricating oil liquid comparing it against the manufacturer's recommendations. The results must be submitted within the annual report.

1.3.10.6 Fuel Oil Lab Report

- 1) The Contractor must provide a fuel lab report to be submitted with the annual report.

**1.4 General Requirements**

1.4.1 Purpose

1.4.1.1 The maintenance and service of building components, sub-systems, systems and integrated systems is of utmost importance to ensure the successful operation of the installed services and utilities.

1.4.1.2 The maintenance must not be considered completed until it can be demonstrated to the Technical Authority that the work defined within this Statement of Work has been satisfactorily performed by the Contractor.

1.4.2 Objective

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1.4.2.1 The objective of this Statement of Work is to engage a Contractor to provide maintenance on the Emergency Electrical Power Supply System to ensure the integrity and uninterrupted performance of the systems as indicated in Part 3 – Equipment Inventory, including but not limited to:

- 1) Diesel Generator(s)
- 2) Fuel System(s)
- 3) Transfer Switch(s)
- 4) Breaker(s)
- 5) Disconnect(s)
- 6) Motor Starter(s)
- 7) Panel Board(s)

#### 1.4.3 Service Calls

1.4.3.1 The Contractor must provide a qualified person(s) as defined by Section 1.1 - Definitions, to respond, on site, on a twenty-four hour, seven day a week basis at no extra labour cost to Canada.

1.4.3.2 The Contractor must respond within 30 minutes and be on site ready to work within two hours. All service call work must be executed by a qualified service personnel named in the Contract and such work must proceed continuously until the system is returned to safe operating condition.

1.4.3.3 Request for Service Calls must only be accepted from the National Call Centre or the Technical Authority.

1.4.3.4 All service calls will be at extra cost to Canada and must be calculated based on the As and When Requested Work Pricing Schedule 2 in the Contract. Billable hours begin when the responding qualified person(s) are on site. Upon completion of the required service work, billable time ends. Canada will accept a minimum charge of two (2) hours. Canada will not accept Truck/Travel or Fuel charges.

#### 1.4.4 Problem Escalation

1.4.4.1 If within the first four hours of working on the equipment, the Contractor's service technician has not been able to make significant progress of

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determining the problem with the equipment, they must then contact their technical support manager, service manager or engineering manager for advice on a further course of action;

1.4.4.2 If the problem is not corrected within a total of eight hours, the service technician must contact their technical support manager, service manager or engineering manager, who must arrange to have someone with more expertise (i.e. an engineer) available on site within the following twenty-four hours.

1.4.4.3 The Contractor must submit a written report within forty-eight hours to the Technical Authority providing a clear and concise rationale of the events leading up to the failure of any component, sub-system, system or integrated system and how the issue was fixed.

#### 1.4.5 Notifications

1.4.5.1 An annually approved schedule is required before the start of the first test and every subsequent year thereafter.

1.4.5.2 The Technical Authority must be notified a minimum of fifteen working days prior to all tests to allow time to make necessary access and security arrangements.

1.4.5.3 The Contractor must ensure that proper notification procedures are in place to avoid false alarms during service, repairs and testing of the equipment identified in Part 3 – Equipment Inventory.

1.4.5.4 The Contractor must ensure that proper notification procedures are in place to avoid any miscommunication. The list of minimum contacts includes but is not limited to: the Technical Authority (TA), PSPC Building Systems Technician (BST), the monitoring service, the fire department and the site security. If there is an issue or delay in gaining access to the site the Contractor's employee or technician must contact the TA and the BST for assistance and at the very least, leave a voicemail message. If the TA or BST does not respond within 30 minutes the Contractor's employee or technician can leave the site. Request to re-schedule the test/inspection must be sent to the TA by the end of the next day of business (16:00).

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- 1.4.5.5 The Contractor must notify the Technical Authority in writing within twenty-four hours or the next day of business, if they miss a scheduled test/inspection for any reason other than cancellation or re-scheduling notification by PSPC. Request to re-schedule the test/inspection must be sent to the TA by the end of the next day of business (16:00).
- 1.4.5.6 The Contractor must notify the Technical Authority in writing within twenty-four hours of repairs or service deemed necessary that were identified during inspections, checks, tests and Service calls that are not included within the Statement of Work.
- 1.4.6 Operational Requirements
  - 1.4.6.1 The Contractor must provide required maintenance as per Contractual requirements and at the indicated frequency, inclusive of the manufacturer's recommendations to maintain the equipment at its original performance level to provide trouble-free operations.
- 1.4.7 Extra Work
  - 1.4.7.1 The Equipment Inventory identified in Part 3 – Equipment Inventory must be inspected, tested and maintained as described herein. All additional parts and labour required to effect repairs to this equipment will be at extra cost to Canada.
  - 1.4.7.2 For any repairs associated with the Equipment Inventory, the Contractor must submit to the Technical Authority for review, within twenty-four hours, a comprehensive part & labour cost summary and the reason for repair(s). If the request is deemed fair and reasonable by the Technical Authority, compensation will be provided to the Contractor as per the “As and When Requested Work” Pricing Schedule 2 in the Contract. The proposed repairs must not proceed without prior consent in writing from the Technical Authority.
  - 1.4.7.3 While the Contractor is on site, deficiencies discovered that can be repaired with available material from the Contractor's stock must be billed as per the “As and When Requested Work” Pricing Schedule 2 in the Contract. The

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approval to proceed with this corrective work can only be authorized by the Technical Authority.

- 1.4.7.4 Components used to repair or replace existing components must be new, compatible with the existing inventory, Canadian Underwriters Laboratories of Canada (ULC) and/or Canadian Standards Association (CSA) listed and must comply with the applicable provisions of the codes, standards, regulations and requirements identified in Section 1.2 – Required Codes, Standards, Regulations and Requirements.
- 1.4.7.5 The Contractor is to identify modifications or improvements to the equipment or system(s) that will enhance equipment serviceability, life expectancy and/or efficiency. The Contractor must submit an estimated cost of the repairs based on the “As and When Requested Work” Pricing Schedule 2 in the Contract.
- 1.4.7.6 The Contractor is to follow the “As and When Requested Work” format when called upon by the Technical Authority to assist the Property Management Team with any extra work. Examples of this type of work or service call would include but are not be limited to, By-Passes, On Site Stand-By, Shut-Downs and Projects.

1.4.8 Building Access Hours

1.4.8.1 Regular, Silent and Weekend Building Working Hours

- 1) Regular building working hours are from 06:00 AM until 06:00 PM, Monday to Friday.
- 2) Silent building hours are from 06:00 PM until 06:00 AM, Monday to Friday.
- 3) Weekend building working hours are from 06:00 PM, Friday to 06:00 AM, Monday.

1.4.8.2 Inspections, Maintenance, Testing and Service

- 1) **With Disruption and Interference**
  - a) The inspections, maintenance, testing and service as defined by this Statement of Work must be carried out at such a time as to not inadvertently interfere with the operation of any equipment

within the building (e.g. cause the shut-down of the computers or any other integrated building systems).

- b) Routine maintenance, testing and service to the Service Electrical Power Supply Systems as required by this Statement of Work, which may cause disruption to the building occupants and/or systems, must not be carried out during normal working hours as defined in article 1.4.8.1- Regular, Silent and Weekend Working Hour.
- c) Disruptive tasks include load transfer, testing of ancillary functions, or other tests and services deemed unacceptable by the Technical Authority.
- d) Testing with disruption and interference tasks required by this Contract must only take place during the **Weekend working hours.**

2) **Without Disruption and Interference**

- a) Routine maintenance, testing and service to the Emergency Electrical Power Supply Systems as required by this Statement of Work, which will not cause disruption to the building occupants and/or systems, may be carried out during **Weekend working hours** as defined in article 1.4.8.1- Regular, Silent and Weekend Working Hour.

1.4.8.3 Site Specific Maintenance Schedule

- 1) **Testing required by this Statement of Work must only take place during normal working hours**

**1.5 Responsibilities**

1.5.1 Completion of the Statement of Work

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- 1.5.1.1 The Contractor must have the complete operational and adjustment procedures of the manufacturers for the equipment concerned, including direct access to the manufacturer's technical support services and service bulletins.
- 1.5.1.2 The manufacturers may possess Proprietary Rights on some or all of the equipment listed in Section 3 – Equipment Inventory. Should a need arise to test, inspect, reconfigure, replace or reprogram such equipment, the Contractor must ensure the Work is completed at no additional cost to Canada.
- 1.5.1.3 It is the responsibility of the Contractor to provide one vinyl hard cover 3 “D” ring type loose leaf binder for 212 mm X 275 mm size paper, which holds the required checklists as per Section 1.3 - Submittals. The binder must be kept available in the emergency power supply room and becomes the property of Canada.
- 1.5.2 Negligence on the Part of Canada and Other Parties
- 1.5.2.1 The Contractor is not required, as part of his Statement of work, to make renewals or repairs necessitated by reason of the negligent operation or misuse of the equipment by Canada or other parties or by reason of any other cause beyond the Contractor’s control.
- 1.5.2.2 The Contractor must notify the Technical Authority by phone within an hour and subsequently to follow up with a written report by fax or e-mail within twenty-four hours of any negligent operation or misuse of the equipment by Canada and other parties. The Contractor may be required to make repair or replace components necessitated by such occurrence at extra cost.
- 1.5.3 Documentation
- 1.5.3.1 It is the responsibility of the Contractor to document the tasks and activities associated with checks, tests, maintenance and service as identified within this Statement of Work.
- 1.5.3.2 The documentation as a result of the above is to be provided to the Technical Authority in accordance to the procedures identified within Section 1.3 – Submittals.

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1.5.3.3 Checks, tests, maintenance and service must be documented as identified within this Statement of Work and must be demonstrated as being correct and complete to the satisfaction of the Technical Authority.

1.5.4 Health and Safety

1.5.4.1 Site Specific Health and Safety Plan: See Section 1.3 – Submittals.

1.5.4.2 It is the responsibility of the Contractor to ensure the health and safety of persons on site, safety of property on site and protection of persons adjacent to site and environment to the extent that they may be affected by conduct of work.

1.5.4.3 It is the responsibility of the Contractor to comply with and enforce compliance by employees with safety requirements of the Statement of Work documents, applicable Federal, Provincial, Territorial and local statutes, regulations, ordinances, and with the site-specific Health and Safety Plan.

1.5.4.4 It is the responsibility of the Contractor to comply with the *Canada Labour Code Part II*, and the associated Canada Occupational Health and Safety Regulations.

It is the responsibility of the Contractor to comply with the Ontario Health and Safety Act and its associated regulations.

1.5.4.5 It is the responsibility of the Contractor to remove from the site any person employed on the site by the Contractor that, in the opinion of the Technical Authority, is a security risk, has been conducting himself/herself improperly or has violated the requirements of the site specific Health and Safety Plan. The Contractor must replace the removed individual with another individual with the same mandatory qualifications within twenty-four hours.

1.5.5 Working Alone Policy

1.5.5.1 No employee must work alone on the site at any time. It is the responsibility of the Contractor to ensure that the appropriate measures are implemented for two or more of its employees to be on site at all times during any job function.

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## **1.6 Summary of Work**

### 1.6.1 Inclusions of the Statement of Work

#### 1.6.1.1 Labour

- 1) The labour for all inspections, testing, cleaning, maintenance, service and contract administration expenses must be provided by the Contractor at no extra cost to Canada.
- 2) The labour for Service Calls must be provided by the Contractor on a 7 days a week / 24 hours basis for the duration of the Statement of Work as per subsection 1.4.3. - Service Calls.

#### 1.6.1.2 Load Bank

- 1) If the building load cannot achieve the 30% test load required by CSA 282 for monthly testing, the Contractor is responsible for providing a load bank and all necessary cabling for connection to the Emergency Electrical Power Supply System or Systems being tested, to meet the required 30% load capacity of the generator on a **Quarterly** basis.
- 2) Prior to the **Quarterly** load bank test, the Contractor will provide their installation location and isolation procedures to the Technical Authority as part of the monthly Inspection -Sequence of Operation Section 1.3 – Submittals.

#### 1.6.1.3 Tools, Equipment and Services

- 1) The Contractor must furnish all necessary Personal Protective Equipment (PPE), tools, services, transportation, materials and labour to execute the work required for the testing, checking, inspection & maintenance of the Emergency Electrical Power Supply System(s), sub-systems and related equipment under the terms and conditions contained herein identified in Part 3 – Equipment Inventory.

#### 1.6.1.4 Consumable Materials

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- 1) The Contractor must provide all necessary consumable materials required for the maintenance and service of the diesel generator equipment. This includes, but is not limited to oil, lubricating oil, lubricating oil filters, fuel oil filters, combustion air filters, distilled water, and cleaning materials.
- 2) Consumable materials used to repair or replace existing system components must be new, compatible with the existing inventory, Canadian Underwriters Laboratories of Canada (ULC) and/or Canadian Standards Association (CSA) listed and must comply with the applicable provisions of the codes, standards, regulations and requirements identified in Section 1.2 – Required Codes, Standards, Regulations and Requirements.

1.6.2 Schedule

1.6.2.1 The first inspection and test must be carried out fifteen working days following the work start date as identified in this Statement of Work, with each successive test following at:

- 1) Monthly;
- 2) Semi-Annually; and
- 3) Annually, as applicable, to be first Monthly.

1.6.3 Hazardous Waste Management Plan

1.6.3.1 General

- 1) The Contractor must comply with the Environmental Protection Act and applicable Provincial and Territorial Codes, Standards and Requirements as per Section 1.2 - Required Codes, Standards, Regulations and Requirements, including local hazardous waste management programs.
- 2) The Contractor must conduct a hazardous waste audit to determine the hazardous waste generated during maintenance, service or repair activities over the duration of the Statement of Work, and prepare a

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written hazardous waste management plan as part of the Site - Work Specific Implementation Plan under Section 1.3 - Submittals.

- 3) All maintenance personnel must be fully briefed on the hazardous waste management work plan and must be required to conform to it for all aspects of the work. The Contractor must be responsible for the enforcement of this requirement. The Technical Authority reserves the right to require the dismissal from the site of personnel who fail to comply with the requirements of the hazardous waste management plan.

1.6.3.2 Scheduling

- 1) The Contractor must coordinate the work involving hazardous waste removal and disposal with other activities at site to ensure timely and orderly progress of work.

1.6.3.3 Execution of Work

- 1) The Contractor must place hazardous waste generated by the performance of the maintenance items and duties required by this Statement of Work in the hazardous waste containers provided by Canada. The containers are to be stored, on the site in an area designated by the Technical Authority. The Contractor must do work in accordance with the hazardous waste management plan.
- 2) Hazardous waste includes but is not limited to :
  - a) Engine oil
  - b) Fuel oil
  - c) Anti-freeze
  - d) Fuel oil filters
  - e) Engine oil filters
  - f) Batteries
- 3) Hazardous waste materials must be handled in accordance with the appropriate Codes, Standards, Regulations and Requirements as

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identified within section 1.2 – Codes, Standards, Regulations and Requirements.

- 4) The Contractor must clean up work area as work progresses.
- 5) The Contractor must remove tools on completion of work, and leave work areas in clean and orderly condition.
- 6) Mechanical and electrical equipment, sub-systems and systems must be protected from damage and blockage.

1.6.3.4 Health and Safety

- 1) Unforeseen Hazard
  - a) When unforeseen safety-related factor, hazard, or condition occurs during performance of the work, the Contractor has the right to follow procedures in place for Employee's Right to Refuse Work, in accordance with Acts and regulations of the province having jurisdiction. The Contractor must immediately advise the Technical Authority verbally and in writing within twenty-four hours.
- 2) Correction of Non-Compliance by the Contractor
  - a) Immediately address Health and Safety non-compliance issues identified by authority having jurisdiction or by the Technical Authority.
  - b) Provide the Technical Authority with written report of action taken to correct non-compliance of Health and Safety issues as identified in Section 1.3 – Submittals.
  - c) The Technical Authority may stop work if non-compliance of Health and Safety regulations is not corrected.
  - d) On-site
- 3) On-site Contingency and Emergency response plan

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- a) The Contractor must comply with the standing emergency plan for the site where the work is being performed

1.6.4 Disposal of Waste

1.6.4.1 Burying of rubbish and waste materials by the Contractor is prohibited.

1.6.4.2 Disposal of waste, volatile materials, mineral spirits, paint thinners or petroleum products into waterways, storm or sanitary sewers is prohibited.

1.6.4.3 Unless specified otherwise, materials for removal become the Contractor's property.

**1.7 Work Restrictions**

1.7.1 Use of site and facilities

1.7.1.1 The Contractor must execute work with least possible interference or disturbance to the normal use of the premises. Arrangements with Technical Authority must be made to facilitate work.

1.7.1.2 The Contractor must maintain security measures established by the existing facility and as approved by the Technical Authority.

1.7.2 Maintenance of Existing Services

1.7.2.1 The Contractor must provide the following in order to maintain existing services:

- c) Personnel, pedestrian and vehicular traffic access.
- d) A flag person where work impedes on regular traffic flow.
- e) Safety barricades, signage and all precautionary measures required to assure the continued use to building access and services.
- f) Liability for damage, safety of equipment and overloading of existing equipment;

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- g) Where building security is reduced by the work, temporary means of maintaining security must be provided i.e. posting a person or persons to monitor entry to the building.

1.7.3 Intended interruption of Services

- 1.7.3.1 The Contractor must notify the Technical Authority fifteen working days prior to intended interruptions of services and obtain written permission before beginning the work.

**PART 2 EXECUTION**

**2.1 General - Emergency Power Supply System(s)**

2.1.1 Performance

- 2.1.1.1 All work must be performed in accordance with the applicable Federal, Provincial or Territorial building, fire and electrical codes as identified in Section 1.2 – Codes, Standards, Regulations and Requirements.
- 2.1.1.2 The Contractor must execute such work in a careful and workmanlike manner.
- 2.1.1.3 Each system, sub-system, integrated system and component associated with the Emergency Electrical Power Supply Systems as identified within Part 3 – Equipment Inventory, must be checked, inspected and tested as per the applicable Codes, Standards, Regulations and Requirements in Section 1.2.

2.1.2 Required Consumable Materials

- 2.1.2.1 The Contractor must provide and store on site, as directed by the Technical Authority, the following consumable materials. These materials must be replaced on an annual basis by the Contractor ;
- 1) A minimum of 4.54 litres of distilled water.
  - 2) Fuel filter(s) of each type and quantity required on fuel system as per Part 3 – Equipment Inventory.

- 3) Oil filter(s) of each type and quantity required as per Part 3 – Equipment Inventory.
- 4) Coolant filter(s) of each type and quantity required as per Part 3 – Equipment Inventory.

### 2.1.3 Scheduling and Planning

#### 2.1.3.1 Maintenance Implementation Strategy

- 1) The Contractor must review the maintenance implementation strategy and planning with the Technical Authority. The Contractor must provide the Technical Authority with a detailed maintenance implementation strategy schedule as per Section 1.3 Submittals.

#### 2.1.3.2 Weekly, Monthly, Test Intervals

- 1) The Contractor must schedule maintenance intervals according to CAN/CSA - C282, which must include:

##### a) Weekly Requirements

Except when Monthly, Semi-Annual and Annual events occur during the term of this Statement of Work, the Weekly requirements will be performed by Canada and other parties.

##### b) Monthly Requirements

The monthly checks, inspections and tests must also include the applicable weekly requirements.

##### c) Semi-Annual Requirements

The semi-annual maintenance, checks, inspections and tests must also include the applicable weekly and monthly requirements.

##### d) Annual Requirements

The annual maintenance, inspection and tests must also include the applicable weekly, monthly and semi-annual requirements. As part of the annual checking, inspection and testing procedures the Contractor is responsible for providing and covering the cost of a load bank and all necessary cabling for connection to the Emergency Electrical Power Supply System or Systems being tested, to meet the required maximum load capacity of the generator.

The Contractor must provide their installation location and isolation procedures to the Technical Authority as part of the Annual Inspection –Sequence of Operation Section 1.3 – Submittals.

The Contractor must submit a detailed sequence of operation for all of the events covered under the Annual inspection as detailed in Section 1.3 – Submittals.

The Contractor must provide a liquid analysis report for the anti-freeze and lubricating oil liquid as per Section 1.3 – Submittals.

e) Five Year Requirements

The five-year maintenance, checking, inspection and testing must be performed in the third year of the Contract duration.

2.1.3.3 Semi-annual and annual tests intervals

- a) There must be a minimum of at least six months between the semi-annual and the annual test of Emergency Power Supply system(s).

2.1.4 Inspections Closeout Tasks

- 2.1.4.1 The Contractor must restore the systems as identified in Part 3 – Equipment Inventory to the operational state as recorded prior to the commencement of the scheduled checks, inspections and tests included in this Statement of Work.

2.1.5 Personnel on site

2.1.5.1 Electrical work

- 1) Electrical work must be performed by qualified electrician(s), as per Section 1.1 – Definitions.

2.1.5.2 Monthly required personnel

- 1) The monthly inspections, checks, and tests must be carried out with personnel holding the following qualifications as identified in part 1.1 Definitions:
  - a) Diesel Engine Technician
  - b) Petroleum Mechanic
  - c) Electrician (only as needed when connecting or switching or isolating equipment)
- 2) A minimum of two qualified personnel must be present for monthly inspections. One can be dual-trained.

2.1.5.3 Semi-Annual Inspection Required Personnel

- 1) Personnel required under the monthly inspections are required at the semi-annual inspection.
- 1) Other qualified personnel or service(s) relevant to the semi-annual testing and work identified within this Statement of Work as outlined in Section 1.1. - Definitions.

2.1.5.4 Annual Inspection Required Personnel

- 1) Personnel required under the semi-annual inspections are required at the annual inspection.
- 2) Other qualified personnel or service(s) relevant to the annual testing and work identified within this Statement of Work.

**2.2 Additional Monthly Requirements**

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2.2.1 Engine Cooling System with Engine Mount Radiator

2.2.1.1 The volume of ant-freeze within the entire cooling system is unknown. Any need to replacing or replenishing any amount of anti-freeze in the system will be at extra cost to Canada. This extra cost is for the anti-freeze only; extra labour charges will not be accepted.

2.2.1.2 Pump(s)

- 1) Suction and discharge pressures must be checked. Where leaks are detected, the Contractor must recommend replacement or repacking of seals.
- 2) Bearings must be checked for overheating, vibration and excessive noise.
- 3) Required lubricants must be checked and topped-up as required. The drip rate of the lubricant must be adjusted, as required.

2.2.2 Fire Pump Transfer Switch(s)

2.2.2.1 Must be tested to ensure correct operation during monthly diesel generator test.

2.2.3 General Annunciator Panel(s) - Local & Remote

- 1) Annunciator panel(s) must be checked to confirm correct operation.

2.2.4 Emergency Power Supply System Room or Enclosure/Container

2.2.4.1 Motor Starters

- 1) Motor starters must be checked for correct operation.

**2.3 Additional Annual Requirements**

2.3.1 Thermographic Survey Requirement

2.3.1.1 After the first 90 minutes of the 120 minutes annual full load test, the Contractor must conduct a complete Thermographic Survey (as defined in

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Section 1.1 – Definitions) of the electrical equipment identified in Part 3 - Equipment Inventory, to identify any thermal anomalies.

2.3.1.2 The Contractor must provide a written report as per Section 1.3 - Submittals.

2.3.2 Engine Cooling System with Engine Mount Radiator

2.3.2.1 The volume of ant-freeze within the entire cooling system is unknown. Any need to replacing or replenishing any amount of anti-freeze in the system will be at extra cost to Canada. This extra cost is for the anti-freeze only; extra labour charges will not be accepted.

2.3.2.2 Engine Cooling

- 1) Glycol Expansion Overflow Tank(s) must be:
  - a) Checked for proper function of pressure gauge and pressure relief cap.
  - b) Checked for leaks and corrosion.

2.3.2.3 Pump(s):

- 1) Suction and discharge pressures must be checked. Where leaks are detected, the Contractor must recommend replacement or repacking of seals.
- 2) Bearings must be checked for overheating, vibration and excessive noise.
- 3) Required lubricants must be checked and topped-up as required. Drip rate of the lubricant must be adjusted, as required.

2.3.3 Engine Exhaust System

- 1) Muffler and/or scrubber must be inspected and cleaned.
- 2) Exhaust piping must be inspected for cracks, corrosion, rust, or any other signs of deterioration.
- 3) Exhaust pipe supports must be inspected for proper support and anchoring.

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- 4) Exhaust pipe insulation must be inspected for cracks and deterioration.

#### 2.3.4 Single Generator Control Panel

2.3.4.1 The breakers located within control panels on generator set or remotely must be:

- 1) Inspected for condition of insulators and barriers
- 2) Inspected for proper anchorage and alignment.
- 3) Inspected for unusual heating.
- 4) Inspected for correct tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or Table 100.12 of NETA
- 5) Cleaned as per manufacturers recommendations.
- 6) Tested to ensure smooth operation.

2.3.4.2 The Programmable Logic Controller(s) must be inspected and the program must be compared with the previous inspection.

2.3.4.3 The engine and generator safeties must be inspected and tested to ensure correct operation of safety features as per CSA C-282.

#### 2.3.5 Multiple Control Panels For Two or More Generators With Synchronizing Feature

2.3.5.1 Generator output motorized breakers

- 1) Must be inspected for the condition of insulators and barriers.
- 2) Must be inspected for proper anchorage and alignment.
- 3) Must be inspected for signs of unusual heating.
- 4) Must be inspected for the correct tightness of accessible bolted electrical connections.
- 5) Connections tightness must be calibrated by a torque-wrench method in accordance with manufacturer's published data or Table 100.12 of InterNational Electrical Testing Association (NETA).
- 6) Generator output motorized breakers must be cleaned.
- 7) Must be operated to ensure smooth operation of the circuit breaker.
- 8) Programmable Logic Controller(s) must be inspected and the program must be compared with the previous inspection.

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- 9) Engine and generator safeties features must be inspected and tested as per CSA C-282.
- 10) Automatic and/or manual synchronizing must be inspected & tested. The Contractor must compare results with the previous inspection.
- 11) Load demand & synchronizing programmable logic controller(s) must be inspected & tested. The Contractor must compare results with the previous inspection.
- 12) Meters and metering equipment must be inspected & tested for correct and accurate operation. Equipment must be calibrated to manufacturers recommended requirements.
- 13) Mechanical Gauges must be inspected & tested for correct and accurate operation. Equipment must be calibrated to manufacturers recommended requirements.
- 14) Lithium batteries
  - a) Must be inspected and tested as required.
  - b) Must have voltage readings as recorded.
  - c) At no extra Cost to Canada, must be replaced as required.
  - d) At no extra Cost to Canada, must be replaced every four years regardless of condition.
- 15) Inverter AC to DC must be inspected & tested. Inverter must be calibrated.
- 16) Operator interface terminal must be inspected & tested. Interface terminal must be calibrated.

2.3.5.2 Communication/operation and Annunciation Between Generator Control Panel and Other Relevant Equipment

- 1) The following equipment must be inspected and tested for correct annunciation:
  - a) Engine
  - b) Generator
  - c) Fuel system
  - d) Ventilation systems
  - e) Building Automation System (BAS)
  - f) Power distribution transfer switches.
  - g) Fire-pump transfer switches.
  - h) Fire alarm system.
  - i) Battery charger.

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2.3.5.3 General Annunciator Panel(s) - Local & Remote

- 1) Annunciator panels must be inspected & tested to confirm correct operation.

2.3.5.4 Emergency Power Off (EPO) Station

- 1) EPO located on the control panel must be inspected and tested to confirm for correct operation.
- 2) EPO located at the entrance to generator room or outside the room must be inspected and tested to confirm for correct operation.

2.3.5.5 Transfer Switches

- 1) Base building transfer switch(s) programming and time delays must be tested.
- 2) Tenant service transfer switch(s) programming and time delays must be tested.
- 3) Fire Pump Transfer Switch(s) must be tested to insure correct operation only. Maintenance is to be performed by Canada and other parties.
- 4) Emergency power circuit breaker for fire pumps transfer switch(s):
  - a) Must be inspected for condition of insulators and barriers
  - b) Must be inspected for proper anchorage and alignment.
  - c) Must be inspected for unusual heating.
  - d) Must be inspected for correct tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or Table 100.12 of International Electrical Testing Association (NETA).
  - e) Must be cleaned as per manufacturer's recommendations.
  - f) Must be tested to ensure smooth operation.

2.3.5.6 Room or Enclosure/Container Ventilation Systems

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- 1) Room/enclosure air supply and exhaust system(s) motorized dampers:
- 2)
  - a) Must be cleaned and inspected.
  - b) Must be operated over full cycle to confirm proper operation.
  - c) Must be tested to ensure that dampers open and close to proper positions.
  - d) Must be inspected to ensure that motor shaft and linkage is not damaged or obstructed.
  - e) Linkage must be lubricated.
- 3) Room/enclosure air supply and exhaust system(s) room thermostat must be tested for correct and accurate operation.
- 4) Room/ enclosure air supply and exhaust system(s) fan and motor assembly must be:
  - a) Checked for excessive noise, vibration and overheating.
  - b) Inspected to ensure fan blades are clean.
  - c) Checked to confirm belt, condition, tension and alignment
  - d) Lubricated.
  - e) Cleaned internally and externally.
  - f) Tested to insure that fan rotates freely.
  - g) Inspected for solid mounting. Tighten mounting bolts if found to be loose.
  - h) Inspected for shaft play and bearing wear. Recommend replacement of defective equipment if discovered.
  - i) Inspected to ensure integrity of safety guard, if fitted with such.
- 5) Room/enclosure air supply and exhaust system(s) motor starter(s):
  - a) Must be checked, inspected and tested
  - b) Must be cleaned of dirt, rust or corrosion.
  - c) Must have their electrical connections torqued to manufacturers' recommended values.
  - d) Must be inspected for frayed strands on flexible leads, flexing over entire length.

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- e) Must be inspected for noise, shading coils, magnetic surfaces, sealing, mechanical binding and loose rivets.
- f) Must be inspected for proper sizing of over-current and overload devices.
- g) Must have their mechanical connectors inspected.
- h) Spring clip pressure of fuse clips must be inspected.
- i) Electrical connections must be inspected for discoloration of any current carrying parts.
- j) Coils must be inspected for signs of overheating or mechanical wear.
- k) Push buttons, selector switches and/or pilot devices must be cleaned and device contacts must be inspected.
- l) Pilot circuit must be tested for continuity.
- m) Contactors must be inspected for flashing; if noted, then adjust contactor to eliminate contact bounce.
- n) Copper fuse ferrules must be polished. The Contractor must inspect for loose ferrules and proper size fuses.
- o) Contact tips must be inspected. The Contractor must recommend replacement if burnt excessively, must not file silver tips. The Contractor must wipe clean and recommend replacement if less than 50% contact surface remains.
- p) Magnet faces must be cleaned, shading checked. Striking coil must be inspected for misalignment and binding. Correct as required.
- q) Overload relays must be tripped by hand to ensure mechanically free. The Contractor must clean, check heater coil and tighten coil connections.
- r) Arc shields must be checked for breaks and burning of arc blow out segments. The Contractor must recommend replacement if 1/3 vaporized.
- s) Rectifiers continuity and voltage must be inspected.
- t) Relays must be cleaned. The Contractor must inspect for mechanical binding and striking and check contacts.
- u) Starting sequences must be tested to ensure controls function properly.
- v) Pilot devices, pressure switches and temperature switches, bottom and top limits of operation must be checked. The

Contractor must check for fluttering of contacts (revealed by pumping of main contacts).

## **2.4 Fuel System(s) Associated With Emergency Power Supply System(s)**

### 2.4.1 General

2.4.1.1 A Qualified Person, as defined in Section 1.1 - Definitions of this specification, must perform the maintenance of the fuel system associated with Emergency Electrical Power Supply System(s).

- 1) The Contractor must record the checks, inspections and tests results and provide reports as defined within this Statement of Work. Refer to Appendix A, B, & C attached mandatory inspection checklists.
- 2) The Contractor must schedule maintenance intervals according to but not limited to Canadian Environmental Protection Act (CEPA) 2008-197 or Provincial/Territorial requirements, National Fire code, CCME - PN1326- Environmental code of practice, CSA – B139, ULC/ORD –C58.12.92, ULC/ORD – C58.14.92 depending on the fuel system volume, as follows:
  - a) Weekly:  
Refer to Appendix A performed by Canada and other parties, Except when monthly or annual occur during the term of this Statement of Work.
  - b) Monthly:  
Refer to Appendix A, & B. The monthly inspection and test must also include the weekly inspection.
  - c) Annual:  
Refer to Appendix A, B, & C. The annual maintenance, inspection and test must also include the applicable weekly and monthly inspection.

### 2.4.2 Annual Testing Requirement

2.4.2.1 The Contractor must test the Quality of the fuel as follows:

- 1) Annually
  - a) CAN/ CSA 282 - visual inspection of fuel (clear and bright test) and;
  - b) The Contractor must submit the fuel sample to a qualified laboratory certified to perform analysis on diesel fuel for contamination and fuel degradation.
  - c) The Contractor must ensure that the laboratory selected meets with the approval of the Technical Authority and is capable of analyzing the quality of the sample as per the requirements identified within ASTM Standard D4176 Specification for Diesel Fuel Oils.
  - d) The Contractor must submit lab reports as per the requirements identified in Section 1.3 - Submittals.
  - e) Test results must indicate that the diesel fuel tested meets the ASTM standard specification as recommended by the engine manufacturer.
  - f) The Contractor must change fuel filter(s) on a yearly basis using the onsite stock.
  - g) Depending on the combined results of the clear and bright test and the laboratory test results, the Contractor must be available to supervise the stabilizing, filtering and fuel replacement at no cost to Canada. Canada must bear the actual filtering & fuel replacement costs excluding Contractor's supervision cost and must be responsible for the disposal of old fuel.
  - h) Upon completion of any of the options identified within part (c) above, the Contractor is responsible for re-submitting a new fuel sample for analysis. Canada must bear the actual cost of this second analysis. Results must be submitted to the Technical Authority.

2.4.3 Additional Scheduling and Planning Requirements

2.4.3.1 Fuel transfer pumps system

- 1) Fuel pumps

- a) Fuel pumps must be greased, in accordance with the manufacturers' recommendations.
  - b) Fuel pumps must be tested to see that it turns freely by hand.
  - c) Suction/ discharge pressures must be inspected.
  - d) Stem must be inspected for leaks. The Contractor must recommend replacement or repacking of seals.
  - e) Bearings must be inspected for overheating, vibration, and excessive noise.
  - f) Lubricant must be inspected and topped up.
  - g) Drip rate of lubricant must be adjusted, in accordance with the manufacturers' recommendations.
  - h) Motor couplings must be checked for worn parts, tightness of mounting shaft and condition of safety guard.
- 2) Motors
- a) Motors must be inspected for overheating, vibration or excessive noise.
  - b) Motors must be cleaned and bolts tightened to recommended manufacturers' torque values.
  - c) Belts must be inspected for correct tension alignment and general condition.
  - d) Bearings must be oiled, in accordance with the manufacturers' recommendations
  - e) Motors must be greased, in accordance with the manufacturers' recommendations
  - f) Guards must be inspected to be in place and must be tightened in accordance with the manufacturer's recommendations.

## **PART 3 EQUIPMENT INVENTORY**

### **3.1 General**

#### 3.1.1 Inventory

- 3.1.1.1 The following is a list of the minimum number of components included in this Statement of Work. Please note inventory is deemed as accurate as possible.

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**3.2 Tilley 04A BB Generator**

3.2.1 Building Information

Building Name	Sir Leonard Tilley Building
Civic Address	719 Heron Rd
City	Ottawa ON
Postal Code	K1A 0S5

3.2.2 Power Generator Set No. 1

Location	A Wing A04A
Manufacturer	Newage Equipment Ltd.
Model No.	F6717/1
Duty	Cont.
Assembly Complete with	Steel base, base isolators

3.2.2.1 Engine

Manufacture / Make	Detroit Diesel
Cylinders	16
Fuel Type	Diesel
Fuel Transfer Pump	1
Block heaters	1 at 120 Volt, 1500W
Power Supplied From	panel # AEBE cct. # XXX
Governor	Mechanical
No. of Oil Filters	2
Oil Filter Manufacturer	Fleetguard LF3333
No. of Fuel Filters	2
No. of Air Filters	2

3.2.2.2 Engine Exhaust System

Silencers	1
Exhaust Piping	Insulated
Drainpipe	Complete with Shutoff Valve

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3.2.2.3 Alternator

Manufacture	Stamford
Type	AC634A
Rating	625 – kVA
Voltage	600/347 Volts
Amperage	578 amps
Power Factor	0.8
Configuration	3 Phase –3 wire
RPM	1800
Frequency	60 Hz
Duty	Cont.

1) Generator Set Control Panel

Manufacture	Lakeside Electric
Serial No.	DS-8175
Location	A04A

2) Generator output Breaker

Voltage	600 V
Amps	600
Location	A04A

3) Generator output Disc. Switch to ATS#1

Manufacturer	Eaton
Voltage	600 V
Amps	200
Location	A04A

3.2.2.4 Engine Cooling System - Mounted Radiator

Radiator	Engine Mounted
Cooling Fan	Engine driven

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3.2.3 Additional Equipment for Generator No. 1

3.2.3.1 Engine Starting System (Battery)

Number of Batteries	2
Model	8D
Battery Voltage	12 Volts
Battery Age	1 year
System Voltage	24 – Volts

3.2.3.2 Battery Charger

Manufacture	Mechron
Model No	CR2F120-024-020B
Serial No	1930

3.2.3.3 Fuel System

Type	Diesel
Day Tank Capacity	454 Litres
Construction	Double Walled
Complete with	Concrete Curb Leak Container
Fuel Level Gauge System	Electric
Alarms	Fuel Containment, tank level & tank sumps
Alarm Info	Armstrong Monitoring Corp Model AMC5100C
Main Tank	Underground
Capacity	10,000 Litres
Location	Outside at North end of A-Wing

1) Tank No. 1

Capacity	10,000 Litres
----------	---------------

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Location	Outside at North end of A-Wing
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3.2.3.4 Fuel Pump

Type of Pump	Albany
Motor Manufacturer	Leeson
Voltage	115V
Amperage	6.6A
Horse Power	1/3
Power Supplied From	Panel AEBE, CCT X

3.2.3.5 Fuel Filters

Albany System No. of filters	1
Code No.	15/14
Raycor System No. of filters	2
Model No.	75/500 Series

3.2.3.6 Fuel Pump Controller

Manufacturer	Allen Bradley
Voltage	120
Phase	1
Power Supplied From	Panel AEBE

3.2.3.7 Transfer Switch ATS#1

Location	A042A
Manufacturer	ASCO
Cat. No.	F96230600G7
Serial No. (m/g-1)	103949
Voltage	347/600 Volts
Amperage	600 Amps
Configuration	3 phase 3 Wire

- 1) Normal Power Circuit Breaker

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Location	B081
Switch Board No	SWBD #2
Breaker No	Cell #1

2) Emergency Power Disconnect Switch

Location	A04A
Volts	600 V
Amps	200 A

3) Emergency Power Circuit Breaker

Location	A042A
Volts	600 V

3.2.3.8 Transfer Switch ATS#3

Location	A04
Manufacturer	ASCO
Cat. No.	B9403800G9X
Serial No. (m/g-1)	X9562
Voltage	600/347V
Amperage	800A
Configuration	3 phase 3 Wire

1) Normal Power Circuit Breaker

Location	B081
Switch Board No	SWBD#1
Breaker No	Cell #1

2) Emergency Power Circuit Breaker

Location	A04
Switch Board No	AEMDA
Breaker No	ATS#3

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3.2.3.9 Emergency Power Off (EPO) Stations

Location	Generator Room A04A
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3.2.3.10 Logbook

Location	Generator Room A04A
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3.2.4 Additional Electrical Equipment for the Generator No. 1

3.2.4.1 Diesel Generator Room Ventilation System

1) Intake and exhaust

No. of Dampers	5
Damper motors	5

3.2.4.2 Emergency Power Distribution Panel AEBE

Voltage	120/240
Amperage	100
Location	A04
Power Supplied from	AESDA Cell#1

3.2.4.3 Switchgear AEMDA

Manufacturer	FPE
Voltage	600
Amps	1600
Location	A04
Air Circuit Breakers	5
Molded Case Breakers	5

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3.2.4.4 Switchgear AESDA

Manufacturer	FPE
Voltage	208/120
Amps	1600
Location	A04
Air Circuit Breakers	4
Molded Case Breakers	8

3.2.4.5 Transformer T-AESDA

Manufacturer	Polygon
Voltage	600/208/120
Size	500KVA
Location	A04

3.2.4.6 Kirk Key Interlocking System

No. of Locks	4
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**PART 4 FUEL APPENDIX**

**4.1 Fuel Appendix A – Weekly Storage Tank Inspection**

4.1.1 Requirements

4.1.1.1 These requirements combine several codes and legislations to ensure a minimum due diligence is achieved. Always adhere to the National Fire Code and manufacturers’ recommendations as a minimum. All testing records must be kept for a minimum of five years with the respective Property Manager. If a facility has an oil-water separator, its components will comply with the previously mentioned procedures.

Fuel Appendix A PWGSC Weekly Storage Tank Inspection Checklist				
Site identifier (DFRP):		Facility name:		
Year of installation:		Tank ID:		
Capacity (liters/gallons)		Stored product:		
Tank type (AST-UST)		Tank material		
Date of inspection:		Name of employee who performed inspection:		
Facility Manager:		Manufacturer of tank:		
	Item	Acceptable	Non-compliant	Corrective Action
<b>A</b>	<b>Applies To All Storage Tanks</b>			
1	Liquid-vapor tight fill connection and cap present and in good working order			
2	Locked ULC listed spill containment at fill pipe with a minimum 15 liters capacity			
3	Secondary containment monitoring system in good working order			
4	ULC rated product level gauge is present and in good working order			
5	Secondary containment free of product and debris			

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<b>B</b>	<b>Fixed fuel-fired device such as furnace, irrigation pump or generator</b>			
8	Functioning emergency shut off device @ pump, furnace or generator with appropriate signage present and in good working order			
9	Product inventory control log book or software present for inventory reconciliation complies with regulatory requirements			
<b>C</b>	<b>Piping for all types of tanks</b>			
10	Corrosion protection on metal surfaces in good working order			
11	Lockable, functioning shut off valve on the supply pipe, located as close as possible to the pipe as its exits the tank			
<b>D</b>	<b>Markings and Signage for tanks</b>			
12	CPPI identifier and CEPA registration tag attached to fill pipe			
13	WHMIS (both UST and AST) and TDGR placards (for AST only) present and in good condition			
14	PWGSC “No smoking”+ anti-static signage present on or near the tank systems (as applicable to the respective tank systems)			
15	Overfill protection device marking present and in good condition			
16	Dip chart present and in good condition			
17	Dip records for the tank and level recorded in log book (all types of tank systems) and/or software inventory records being recorded and available			
<b>E</b>	<b>Emergency Procedures</b>			

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18	Spill kit present, appropriately sized and in good condition with an emergency response plan (in spill kit or displayed in the tank's vicinity)			
	Remarks:			
	Performed by:		Supervised by:	
	Witnessed by:			

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**4.2 Fuel Appendix B - Monthly Storage Tank Inspection Checklist**

4.2.1 Requirements

4.2.1.1 These requirements combine several codes and legislations to ensure a minimum due diligence is achieved. Always adhere to the National Fire Code and manufacturers' recommendations as a minimum. All testing records must be kept for a minimum of five (5) years with the respective Property Manager. If a facility has an oil-water separator, then its components will comply with the procedures A through E.

<b>Fuel Appendix B</b>				
<b>PWGSC Monthly Storage Tank Inspection Checklist</b>				
Site identifier (DFRP):		Facility name:		
Year of installation:		Tank ID:		
Capacity litres/gallons)		Stored product:		
Tank type (AST-UST)		Tank material		
Date of inspection:		Name of employee who performed inspection:		
Facility Manager:		Manufacturer of tank:		
	Item	Acceptable	Non-compliant	Corrective Action
<b>A</b>	<b>Applies To All Storage Tank Locations</b>			
1	Fencing and gate (when present) in good order			
2	Collision protection surrounding the tank present and in good order			
3	Functioning lighting system at fill port			
<b>B</b>	<b>Applies To All Storage Tanks</b>			
4	Have any corrective actions occurred to address corrosion protection deficiencies noted in weekly inspections?			
5	Product shut off device @ pump in good working order			

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6	Tank secondary containment monitoring system is in good working order (if it has been triggered notify PM immediately)			
7	Vent whistle (if present) or other auditory visual alarms (mandatory for registered systems) are in good working order			
8	Inspect above ground piping and fuel filters for leaks (ensure compatibility with fuel type and date of last replacement for filter is indicated)			
9	Spill container free of product (notify PM immediately if it does have fuel in it)			
10	ULC/CSA labeled fire extinguisher (20 ABC) present and undamaged			
11	High-Low fuel level alarm visual/auditory notification system functioning and in good order			
12	Successful monthly start-up of generator and verification of operation of the transfer pump (s), as well as condition of sump (s)			
<b>C</b>	<b>Piping for all types of tanks</b>			
13	Visually verify condition of the anti-siphon (isolation) valve			
14	Lockable shut off fuel supply-return valve are in the open position			
15	Locked drainage valve (if provided for secondary containment zone) is in a closed position			
16	Markings and Signage for all tanks.			
17	PWGSC registration tag is present and in good condition.			

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18	Electrical power shut off device signage in good order.			
19	Fuel Management System (FMS) controller lockout/restart functioning and in good order.			
20	Correct type of monitoring well cover present and in good order (UST's only)			
Remarks:				
	Performed by:		Supervised by:	
	Witnessed by:			

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**4.3 Fuel Appendix C - Annual Storage Tank Inspection Checklist**

4.3.1 Requirements

- 4.3.1.1 The annual compliance assessment should only be done by a provincially licensed and experienced contractor since many of items will have come in direct contact with the fuel and/or electrical service.
- 4.3.1.2 The annual system verification will entail a full series of tests according to both National Fire Code and manufacturers' recommendations. Mandatory annual integrity testing for UST and all buried piping are to be done according to National Fire Code, Storage Tank Regulations and manufacturer's recommended pressure and time period.
- 4.3.1.3 Please attach the original copy of the testing results to this form.
- 4.3.1.4 All records must be kept for a minimum of five (5) years with the respective Property Manager. If a facility has an oil-water separator, then its components will comply with the procedures A through G.

<b>Fuel Appendix C</b>				
<b>PWGSC Annual Storage Tank Inspection Checklist</b>				
Site identifier (DFRP):		Facility name:		
Year of installation:		Tank ID:		
Capacity (liters/gallons)		Stored product:		
Tank type (AST-UST)		Tank material		
Date of inspection:		Name of employee who performed inspection:		
Facility Manager:		Manufacturer of tank:		
	Item	Acceptable	Non-compliant	Corrective Action
<b>A</b>	<b>Applies to All Storage Tank Locations</b>			
1.	access for emergency and delivery vehicles to enable a 15 m turning radius surrounding location			

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2.	No ignition sources within a 7.5 m radius			
3.	Drainage control present in case of spill or emergency			
4.	Lighting fixtures operational at fill port and/or pump			
<b>B</b>	<b>Applies to all Storage Tanks</b>			
5.	ULC rated vent cap in good working order and the cap height must be at least 2000 mm for diesel vs. 3500 mm for gasoline above grade, as well as a minimum 1200 mm above the tank surface			
6.	Operational condition of the federal storage tank system registration tag			
7.	ULC labeled Emergency tank vent (AST only) is in good working order			
8.	Secondary containment free of product and debris			
9.	Corrosion protection system verification being conducted and documented			
10.	Corrosion protection monitoring is in good working order			
11.	Liquid-vapor tight fill connection + fill cap is functioning and in good working order			
12.	Fuel shut off device @ pump is in working order			
13.	Conduct diagnostic on the tank system's inventory monitoring controls			
14.	Locked ULC listed spill containment at fill pipe (15 liters capacity minimum) is in good working order			
15.	Stair access (if reach height to fuel dispenser exceeds 990 mm) present and in good working order			
16.	Overfill protection device is in good order and labeled			
17.	Full length suction pipe (waste oil and oil-water separators only) present			

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18.	Secondary containment free of product			
19.	Tank secondary containment monitoring system in good working order			
20.	Graduated ULC rated product level gauge present and in good working order			
21.	Ensure AST support frame minimum is 150 mm above grade is in good order			
22.	Presence of ground water, vapor and monitoring well (+ cap)			
23.	Vent whistle or other auditory visual alarms systems present and in good working order			
24.	Verify any sump for leaks and correct if necessary			
25.	Ground water, vapor and monitoring wells in good working order			
26.	Records for tank bottom water-sludge level are present			
<b>C</b>	<b>Fixed fuel-fired device such as furnace, irrigation pump or generator</b>			
27.	Emergency pump shut off device (@ pump, furnace or generator) with signage is present and in good order			
28.	Low-High fuel level alarm in good working order			
29.	Transfer pumps leak inspection conducted and documented			
30.	Product inventory control system diagnostic being conducted and documented			
31.	National Fire Code required annual fuel quality test or rotation of entire fuel capacity of tank being conducted and documented			
32.	Piping control valves in good working order			
<b>D</b>	<b>Markings and Signage for all Tanks</b>			
33.	CPPI and tank identification tags at the fill pipe present and legible			

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34.	TDGR placard (for AST only) present and legible			
35.	ULC label (for AST) present and legible			
36.	Overfill protection device marking present and legible			
37.	Electrical power shut off device signage present			
38.	Piping product label (once piping protrudes inside building) and direction of flow are present and legible			
39.	Confirm presence and condition of monitoring well cover identification and replace if necessary			
<b>E</b>	<b>Piping for all types of tanks</b>			
40.	Corrosion protection on metal surfaces			
41.	Corrosion protection monitoring is functioning and inspections are being recorded on a monthly basis			
42.	Anti-siphon (isolation) valve is present and in good working order			
43.	Lockable product shut off valve functioning and in open position			
44.	Drainage valve (for secondary containment if applicable) is functioning and locked in a closed position			
45.	ULC/CSA/ASTM/ASME valves are labeled accordingly			
46.	Operation condition of all fuel carrying piping aboveground			
	Remarks:			
	Performed by:		Supervised by:	

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	Witnessed by:		
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