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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

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Title - Sujet CCTV EQUIPMENT AT MILLHAVEN	
Solicitation No. - N° de l'invitation 21120-147892/A	**Amendment No. - N° modif.** 003
Client Reference No. - N° de référence du client 21120-14-2007892	**Date** 2015-03-04
GETS Reference No. - N° de référence de SEAG PW-$$HN-461-66520	
File No. - N° de dossier hn461.21120-147892	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2015-03-13**	**Time Zone** **Fuseau horaire** Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
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Canada

Modification 003 est émise afin de changer le fuseau d'horaire du date de fermeture et pour addresser les questions reçus.

1) **INSÉRER:** Heure avancée de l'est (HAE)
SUPPRIMER: L'heure normale de l'Est (HNE)

2) Questions et Réponses- French to follow : Copie en français à suivre

3) Addition des pièces adjointe:
- 421 CCTV Addendum MHZ in PDF
- Points of Interest on site Bidders Meeting
- NE804 Révision 3

TOUS AUTRES TERMES ET CONDITIONS DEMEURENT INCHANGÉES

Correctional Service Canada
Technical Services Branch
Electronics Systems

Issue 1
February 3, 2015

STATEMENT
OF
TECHNICAL REQUIREMENTS

UPGRADE

of

INTERNAL (SIDS) CCTV SYSTEMS

at

MILLHAVEN INSTITUTION

Addendum

This Statement of Technical Requirements is approved by the Correctional Service of Canada for the upgrade of the existing Hybrid CCTV System at Millhaven Institution.

ADDENDUM TO APPENDIX C - SITE SPECIFIC REQUIREMENTS

CCTV Node installation details

Nodes and associated Equipment Cabinets:

General:

The contractor must supply and install new network switches, new fibre optic and CAT6 cabling, termination bays and all necessary SFP modules, patch cords and electronic equipment cabinets to provide a complete CCTV network throughout the institution. All cabinets will be dressed and labeled to *ANSI/TIA-568* standards

Node #11 G GI Building (MHZ-115A)

The contractor must supply and install into MHZ-1 Room 115A a wall mount low profile 19" 8RU rack mount cabinet with up to 29" available depth. The provided cabinet will be key lockable. An example of an acceptable cabinet is the Hammond HLP wall mount cabinet. The contractor will install a new 12 strand OM3 50/125 fibre optic cable between MHT-1 169 and MHZ-1 115A. The supplied fibre optic cable will have all 12 strands terminated at both ends onto a 1 RU fibre termination bay using matching fibre optic connectors to existing within MHT-1 169.

The contractor must provide a suitable network switch in MHZ-1 115A to provide a network connection from MHT-1 169 to MHZ 115A. The switch will meet all specifications described in section 4.7.3 of the STR for this project. The provided network switch will also provide at a minimum 8 Gigabit PoE CAT6 ports and 2 SFP ports suitable for OM3 Gigabit connectivity.

The contractor must provide and install into the provided cabinet a slim UPS capable of supporting the network switch for up to 20 minutes run time. The provided UPS will be connected to the CCTV network and will report to the FAAS computer UPS status as is detailed in section 4.9 & 4.14 of the STR for this project.

The contractor must provide CAT6 connectivity from MHZ-1 115A to MHZ-1 113 and MHZ-2 214. The contractor will make every effort to hide all conduits in walls and ceilings and will only provide wire mold or surface mount terminations with the explicit written permission of the technical authority for this project.

Wardens and Crisis Management NVUS:

Appendix C section 182 will be amended to the following.

The contractor must provide 2 NVUS Clients as described in Appendix C of the STR section 182 with the following adjustments.

M35 – MHZ-1 113 (Crisis Management Boardroom)

The contractor must supply and install a complete network client that meets or exceeds all of the requirements detailed in ES/STD-0228 with the following inclusions:

- Monitor – The contractor will provide a 27" LED desktop monitor (1 per client).
- Client CPU – The clients supporting these monitors will be a tower style PC located with the monitor in a workstation configuration. The client will produce no more than 50db sound pressure @ 24". The client will be equipped with the following as a minimum:
  - 8GB DDR3 RAM memory
  - 256GB SATA 3 6Gb/s solid state hard drive
  - Video card with 1GB RAM memory and DirectX 9.0 support.
  - Intel i7 quad core 3.4 GHz processor with 8MB cache memory.
  - 10/100/1000 Ethernet Network Interface Card
  - Keyboard and Mouse Combo - 1000 DPI, Spill-resistant, Durable keys, Plug-and- play, USB
  - 2 – 1 KVM switch with USB and DVI
- Configuration – The clients will be configured as SIO workstations, with access to all cameras in the institution. The workstation will have the Genetec live viewer and archiver player applications installed as well as suitable software for burning CD and DVD optical disks for data removal. The OS and application will be loaded onto the SSD and the 2TB drive will be configured for local video storage.

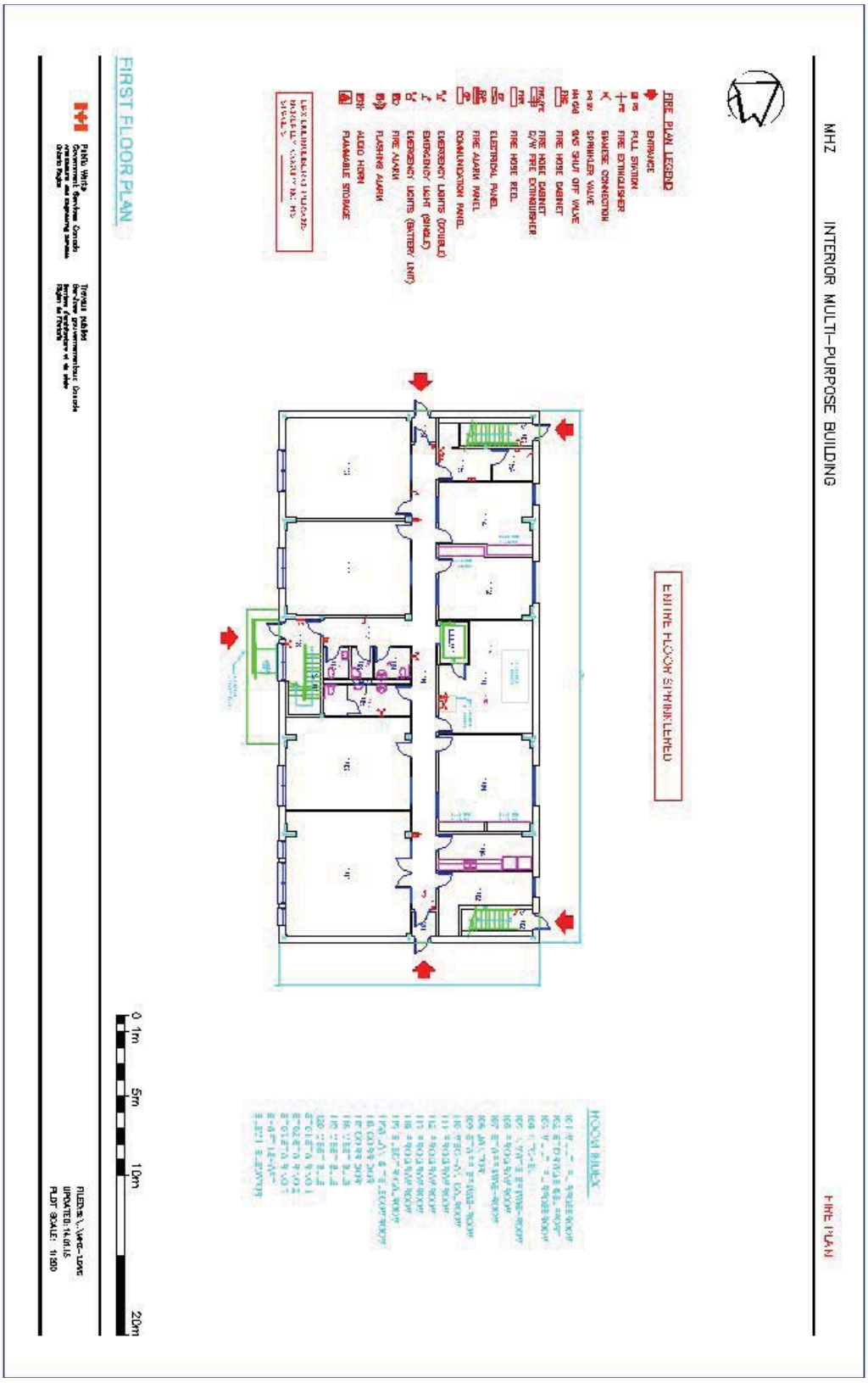
M36 – MHZ-1 214 (Warden's Office)

The contractor must supply and install a complete network client that meets or exceeds all of the requirements detailed in ES/STD-0228 with the following inclusions:

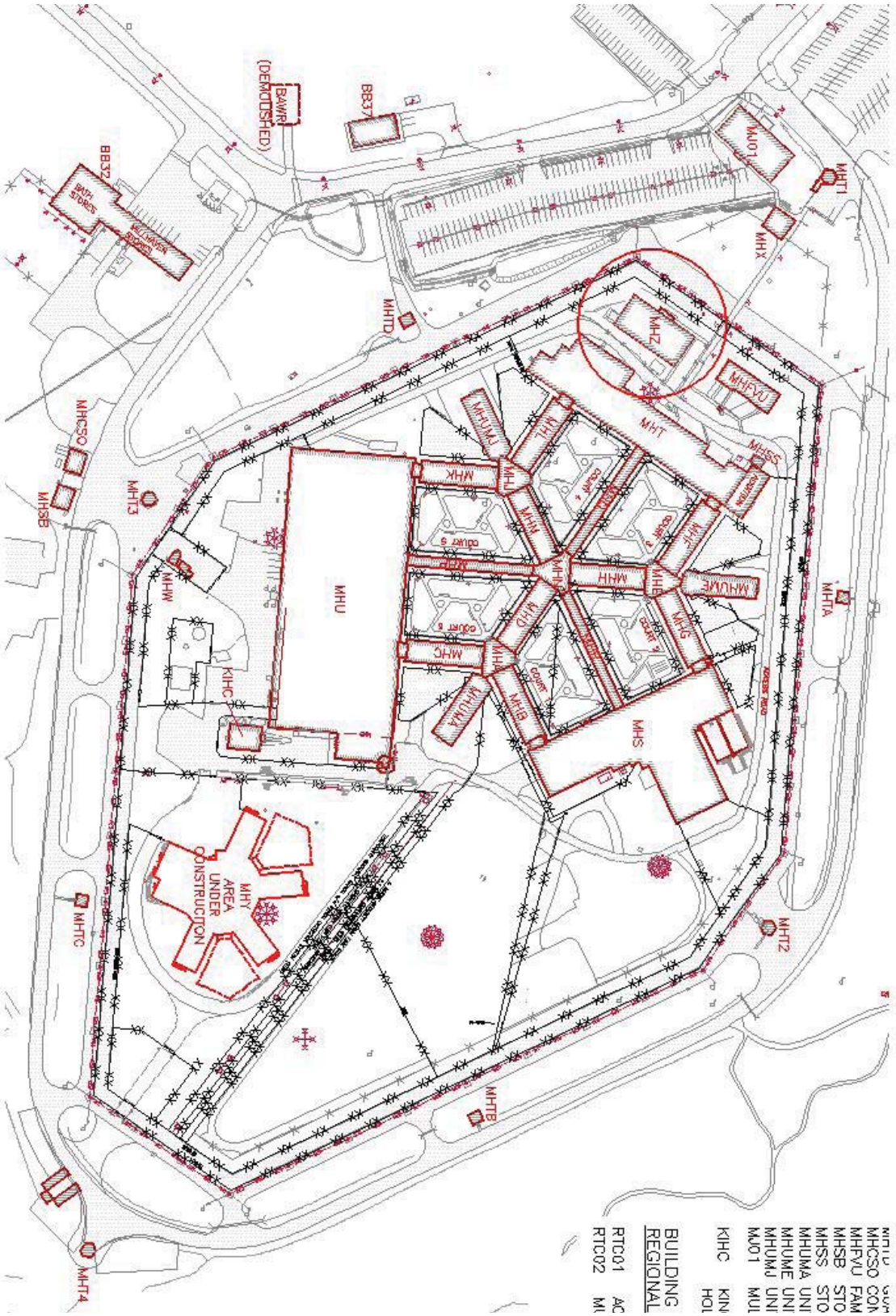
- Monitor – The contractor will provide a 27" LED desktop monitor (1 per client).
- Client CPU – The clients supporting these monitors will be a tower style PC located with the monitor in a workstation configuration. The client will produce no more than 50db sound pressure @ 24". The client will be equipped with the following as a minimum:
  - 8GB DDR3 RAM memory
  - 256GB SATA 3 6Gb/s solid state hard drive
  - Video card with 1GB RAM memory and DirectX 9.0 support.
  - Intel i7 quad core 3.4 GHz processor with 8MB cache memory.
  - 10/100/1000 Ethernet Network Interface Card
  - Keyboard and Mouse Combo - 1000 DPI, Spill-resistant, Durable keys, Plug-and- play, USB
  - 2 – 1 KVM switch with USB and DVI
- Configuration – The clients will be configured as SIO workstations, with access to all cameras in the institution. The workstation will have the Genetec live viewer and archiver player applications installed as well as suitable software for burning CD and DVD optical disks for data removal. The OS and application will be loaded onto the SSD and the 2TB drive will be configured for local video storage.

Building Map MHZ-1

Building Map MHZ-2



Millhaven Key Map



Gents:

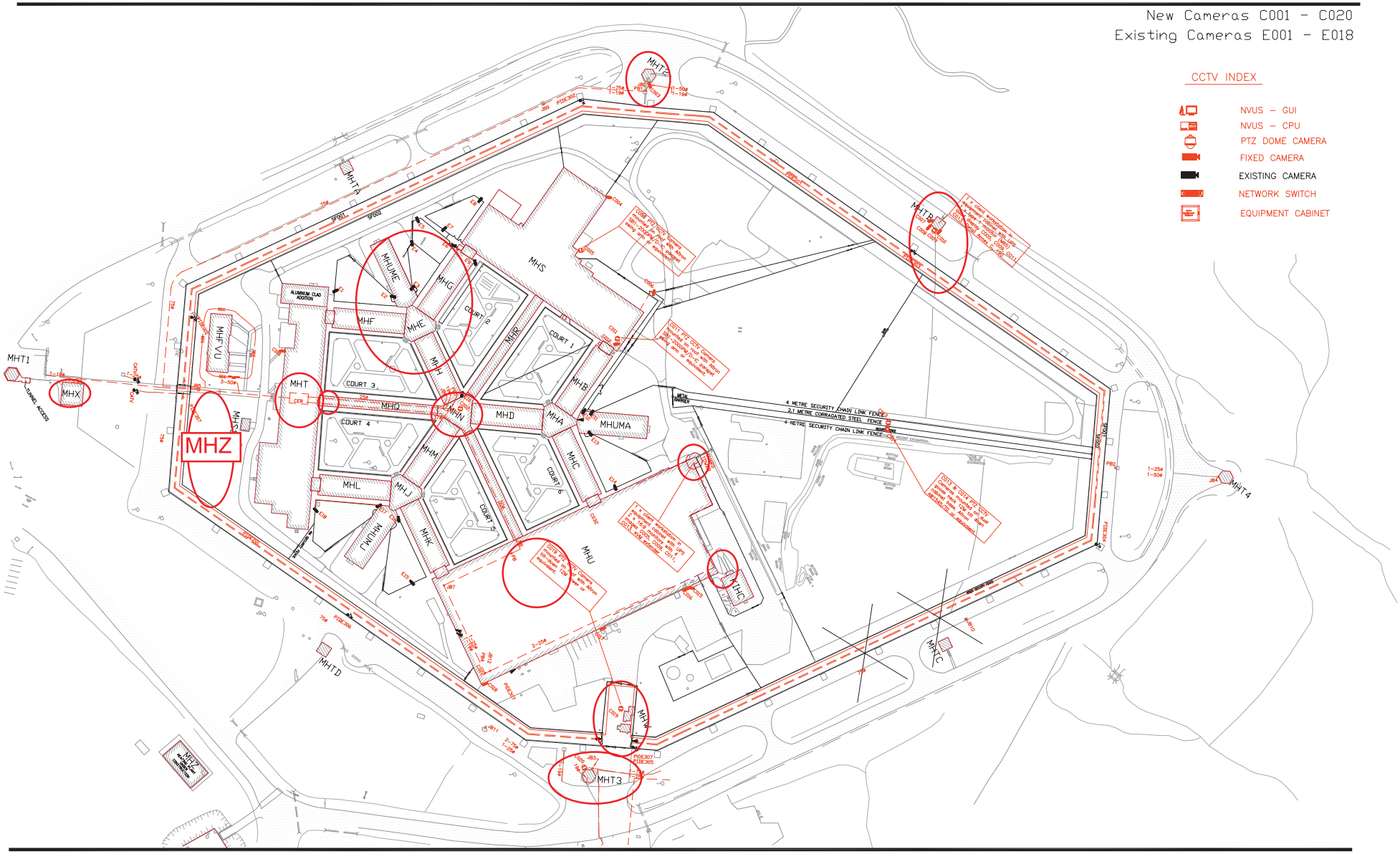
Some points of interest in today's site bidders meeting.
Attached is a site map for reference, (this map also located in Appendix H)
Corresponding map identified in red

1. GI building (MHZ)
2. T building (MHT)
   - T169
   - MCCP
   - V&C
   - CER
   - Main
3. N control (MHN)
   - N basement
   - A basement
   - E basement
   - J basement
   - E control
4. E unit (MHE)
   - E unit management offices
   - 1G
5. S building (MHS)
   - S control
   - S basement
   - Segregation
   - Hospital
   - S Gallery
6. U building (MHU)
   - U control
   - U gallery
   - Kitchen gallery
   - U tower
7. ID building (MHX)
8. 2 Tower (exterior only)
9. B outpost (interior)
10. 3 Tower (exterior only)
11. Sally port (MHW)

MILLHAVEN SITE–MAP

CCTV PLAN

New Cameras C001 – C020
Existing Cameras E001 – E018



Millhaven Institution
Correctional Services Canada
Electronic Security Systems Group
Ontario Region

Millhaven Institution
Service correctionnel Canada
Systèmes de sécurité électroniques Group
Région de l'Ontario

Questions and Answers Part 3
Solicitation 21120-147892

Reference Project STR

Q32 – 4.5.1 Will the existing PIDS / SIDS / Kitchen / Living Unit Cameras be converted to h.264 formats?

<CSC> Yes all existing cameras with H.264 stream capacity will be reprogrammed for H.264 output.

Q33 – 4.8.5 Please clarify number of cameras to be recorded.

<CSC> Section 4.8.5 and 4.8.7 of this STR detail NVR Capacity.

Q34 – 4.9 Is the contractor required to integrate the camera alarms for the new 96 man living unit?

<CSC> Yes the contractor shall integrate camera alarms for up to 60 cameras.

Q35 – 4.9.1.3 Network link loss (all nodes) – please provide clarification regarding this requirement i.e. network link loss annunciation only or additional?

<CSC> Loss of a network switch will create an alarm on the S100 PIDS/FAAS system in the CER/MCCP.

Q36 – 4.15.3 – Is there a minimum amount of rack units or spare rack units to be provided for the wall mount equipment cabinets?

<CSC> Wall Mount equipment cabinets must have a minimum of 8RU, an example of an acceptable cabinet is the Hammond - HLP8UBK.

Q37 – 4.15.3.2 – Is there be a minimum amount of outlets to be provided in the power distribution strips?

<CSC> Wall mount cabinets will require a minimum of 6 outlets on a horizontal power strip.

Q38 – 4.15.3 – Are rear rails required?

<CSC> Yes, except in the wall mount cabinet.

Q39 – 4.14 – What percentage of UPS space is required for future capacity?

<CSC> Provided UPS units will meet the specification detailed in ES/STD-0804 (ES/NE-0804 French) attached.

Appendix C

Q40 – Appendix C #208 / Appendix G - 8.1.1 U Tower – Is the fibre existing as provided in the sketch or is the contractor to install a 12 strand OM3 as described in #208 of Appendix C?

<CSC> The contractor will provide a new fibre as described in section 208 of Annex C of the STR.

Q41 – Appendix # 13 / # 18 - Camera 13, 14, 19 – How many winches are to be supplied in total?

<CSC> 2 winches are to be supplied in total.

Q42 – Appendix # 49; 72 – Please clarify any specific mounting instructions for camera 52.

<CSC> Contractor will provide a mounting bracket for the camera that will be welded to the underside of the staircase similar to other cameras mounted into the stairwell in units A,E & A. The contractor will replace or modify brackets where existing cameras are to be replaced with new.

Q43 – Appendix # 194 – please clarify proper section of STR. * 4.14.3 does not specify equipment cabinets
Appendix # 198 – Please clarify proper section of STR. * 4.14.2 does not specify equipment cabinets
Appendix 199 / 201 / 203 – Please clarify proper section of STR. * 4.12 does not specify equipment cabinets

<CSC> Typographical corrections for Appendix C sections 192 through 208.

Section 192 – change "section 4.14.2 of this document" to "section 4.15.2 of this document"
Section 194 – change "section 4.14.3 of this document" to "section 4.15.3 of this document"
Section 196 – change "section 4.14.2 of this document" to "section 4.15.2 of this document"
Section 198 – change "section 4.14.2 of this document" to "section 4.15.2 of this document"
Section 199 – change "section 4.12 of this document" to "section 4.15.2 of this document"
Section 200 – change "section 4.12 of this document" to "section 4.15.2 of this document"
Section 201 – change "section 4.12 of this document" to "section 4.15.2 of this document"
Section 203 – change "section 4.12 of this document" to "section 4.15.2 of this document"
Section 208 – change "section 4.14.3 of this document" to "section 4.15.3 of this document"

Questions

Q44 – Please identify the existing load at locations whereby a new UPS unit is required to power existing and new equipment.

<CSC> Contractor will provide new UPS of the following capacities.

Node 1 – 10KVA
Node 2 – no UPS required
Node 2.1 – 2KVA
Node 2.2.1 – no UPS required
Node 3 – calculate on equipment to be provided*
Node 4 – calculate on equipment to be provided*
Node 4.1 – calculate on equipment to be provided*
Node 4.2 – calculate on equipment to be provided*
Node 5 – calculate on equipment to be provided*
Node 5.1 – calculate on equipment to be provided*
Node 6 – no UPS required
Node 6.1 – calculate on equipment to be provided*
Node 7 – calculate on equipment to be provided*
Node 8 – calculate on equipment to be provided*
Node 8.1 – no UPS required
Node 8.1.1 – calculate on equipment to be provided*
Node 8.2 – no UPS required
Node 9 – no UPS required
Node 10 – no UPS required

* NOTE: where response is "calculate on equipment to be provided" all equipment in cabinet is being replaced therefore bidder can calculate the UPS load and the capacity requirement.

Q45 – Section 4.8.5 of the STR assumes a data rate of 6Mbps per camera. This assumption does not appear to be consistent with the use of H.264 compression. Please confirm that the NVR capacity should be based upon 6Mbps.

<CSC> This question previously answered.

Q46 – The provided NVR will have sufficient capacity to record up to 400 cameras at 800x600 pixels minimum, assuming a data rate of 6Mbit/second, at a frame rate of 30 fps for a minimum time period of 168 hours (~455 GByte/camera). The compression method must be H.264 Compression will be 70% where 100% is highest quality."

Are we to use the above parameters when calculating the storage space or should we use the actual camera data rates based on the camera types given in the STR to calculate the CCTV storage.

<CSC> The NVR capacity will be calculated at the size specified in Section 4.8.5 of this Statement of Technical Requirements.

Q47 – Would it be possible to electronically issue the STR addendum that was distributed at the site visit?

<CSC> STR addendum was electronically distributed 2015-02-09, and is re-attached.

Q48 – The STR in concert with ES/STD-0227 identifies a requirement to provide a 32" video monitor with a maximum power consumption of 48W. Please provide an example of a 32" product that CSC finds acceptable for this requirement.

<CSC> Power consumption requirements for monitors will apply as follows.
Type 1 Monitor – Control Post Monitor 22" LED
<CSC> power consumption up to 30W
Type 2 Monitor – Advanced User Monitor 27" LED
<CSC> power consumption up to 40W
Type 3 Monitor – Power User Monitor 32" LED
<CSC> power consumption up to 50W

Q49 – The STR identifies a requirement to annunciate remote switch failures on the FAAS. Please explain this requirement in more detail.

<CSC> If a remote switch fails an alarm will be displayed on the FAAS of the S100 PIU.

Q50 – Please indicate if the 24P and 8P switches required for the lower capacity buildings need to be sourced from the same vendor utilized for the core and primary edge switches.

<CSC> The provided network switches must meet the criteria in section 4.7 of this STR.

Replace "vendor" with "manufacturer".

The new network switching infrastructure must be sourced by one switch manufacturer with the ability to interface in a multi- manufacturer manner to other manufacturers equipment should future requirements deem this necessary.

Q51 – The STR identifies a document to provide a 8P PoE/PoE+ fanless network switches. Please indicate if all 8 ports are required to support PoE+.

<CSC> Regards 8 port edge level switches - all ports must support PoE+

Q52 – CSC ES/STD-0229 (Network Video Recorder Standard) is not consistent with the NVR requirement detailed in the STR. Please identify the extent to which ES/STD-0229 is applicable.

<CSC> See section 2.1 of this STR.

2.1 Applicability

The provisions contained in the documents listed in the following paragraphs will apply to all aspects of this requirement, unless these provisions have been exempted or modified by this STR.

Q53 – There are two buildings located in the sallyport. Please confirm which building the project equipment is to be located in.

<CSC> The building closest to the outer Sallyport gate. This was identified during the site bidders meeting.

Q54 – The STR identifies a to provide 1RU workstations whereas the floor plan notes indicate 2RU maximum. Please clarify.

<CSC> Only one floor plan note indicates 2RU. change map MHS-B to read "All clients will be rack mount ***1RU*** maximum".

Q55 – Please confirm that PVC installation under asphalt will require a concrete encasement.

<CSC> This is detailed in ES/SPEC-0006 referenced and provided in Appendix I

Q56 – The STR identifies a requirement to install a fibre cable between Node 1 (MHT-169) and Node 8 (MHU-202 U Gallery). During the site visit, the possible use of an existing partial conduit path was discussed. Please provide details with respect to the existing available conduit.

<CSC> In the site bidders meeting it was identified an existing conduit can be used.

Q57 – Item 208 of the "Site Specific Requirements" indicates that a new 12 strand OM3 fibre cable is required between Node 8 and Node 8.1.1. However, the fibre layout in Appendix G indicates that this fibre is existing. Please clarify this requirement.

<CSC> As per Annex C section 208 The contractor must provide and install a new 12 strand 50/125 OM3 fibre optic cable from Node #8 to Node #8.1.1.

Q58 – Please confirm that there is an existing useable conduit path between Node 1 (MHT-169) and Node 11 (MHZ-115A).

<CSC> This was addressed in the site bidders meeting. There is a path.

Q59 – Nodes 4, 6, and 7 require two 48P network switches. Please clarify if the GB SFP requirement is for four per switch for a total of eight or if it is 2 or 8 per network switch.

<CSC> A minimum of 4 GB SFP ports per 24 Port PoE+ GB switch is required.

Q60 – The camera assignment schedule indicates that there are two cameras assigned to Node 10 (Tunnel). Is there an existing network switch at this location?

<CSC> A PoE switch with available ports is located at Node 10 as is indicated in Appendix G page 11.

Q61 – Item 194 of the "Site Specific Requirements" document indicates that there are 12 fibre strands to be terminated in B-Tower. Please confirm that the existing fibres are dark.

<DS>Appendix C Section 194 reads "The contractor must utilize an existing 6 strand 62.5/125 OM1 fibre optic cable from Node #2.1 to Node #2".

Q62 – Please clarify if there are existing conduit paths between the Unit A/E Management Offices and their associated basement node.

<CSC> The contractor must provide a conduit from Node 5 to Node 5.1 and from Node 6 to Node 6.1.

Q63 – The Node 1 layout shown in Appendix G indicates that the clients for M30, M31, and M32 are to be installed in MHT-169. Items 179 and 180 of the Site Specific Requirements indicate that these clients are to be installed in MHT Room 107. Please clarify.

<CSC> Clients referenced in Sections 179 and 180 of Appendix C are to be located in the equipment cabinets in MHT-169 as per the Node 1 layout diagram on Page 1 of Appendix G.

Q64 – The Appendix F Monitor Assignment schedule indicates that monitors M35 and M36 are Type 3 (32") units. Item 182 of the Site Specific Requirements indicate that these monitors should be 27" units. Please clarify.

<CSC> Monitors M35 and M36 are to be Type 3, 32" LED monitors.

Q65 – The camera numbers and locations detailed in Appendix E do not match the provided floor plans. For example, reference drawings MHQ-1, MHS-1, MNH-1, MHT-1, MHX-1, and MHU-1. To assist in conduit take-offs, please clarify where each camera is located.

<CSC> Appendix H provided in the original STR documents included a camera numbering error. All camera and node locations are accurate and remain unchanged. The revised Appendix H is attached.

Q66 – Are there existing Omnicast monitors located in the V&C Control Post? If so, where are they currently cabled to for connection into the existing Omnicast network?

<CSC> Yes, they are cabled to Node 1, MHT-169.

Q67 – Appendix E indicates that there are 123 existing cameras (8 on 421-Key, 10 in MHA, 11 in MHE, 11 in MHJ, 2 in MHL, 2 in MHM, 8 in MHN, 37 in MHS, 14 in MHT, 18 in MHU, and 2 in MHX) to be upgraded as part of this project. Information detailing the existing Omnicast network has not been provided with the tender documentation. So that accurate conduit requirements can be derived, please indicate where each existing camera is cabled to for interconnection into the existing Omnicast network.

<CSC> There is no requirement to provide new conduit or cabling for existing cameras. Only the camera is to be replaced. Existing cameras are already connected to identified nodes on the Omnicast network. Existing cameras and node connection is identified in Appendix E.

Q68 – From Node 2.2 to Node 2.2.1, is there an existing conduit path that can be retained for this connection or is the contractor to provide a path as well repair any damaged asphalt?

<CSC> see section 196 of Appendix C of this STR.

Q69 – As there is a new wall mount rack getting installed in MHW, can Camera 019 be routed to within the new wall mount rack (Node 2.2.1)?

<CSC> see section 196 of Appendix C of this STR.
<CSC> see Appendix E reference C-19 of this STR.

Q70 – Is it to be assumed that Emergency Power is available in MHW (15A)?

<CSC> see section 196 of Appendix C of this STR.

Q71 – For Camera C013 and C014, is the contractor to provide new fiber from this tower to the closest equipment room or is there existing fiber in place that can be re-used?

<CSC> The contractor will provide a new 12 strand OM3 FO cable from camera 13/14 to the new camera tower to be provided as identified in Appendix C – section 13 and on map "Millhaven Site-Map" The existing conduit has coaxial cabling routing into U-Tower up into MHU-201 and terminated at Node 8 (MHU-202).

Q71A – For Camera C013 and C014, is the contractor to provide new electrical from this tower to the closest equipment room or is there existing electrical in place that can be re-used?

<CSC> The existing electrical is to be reused for this tower.

Q72 – Within the attached Addendum #1, Q3 and Q2 did not have an Addendum, can this please be provided?

<CSC> The Addendum to the STR was provided at the site visit in hard copy. A pdf version is being posted with this amendment.

Q73 – If the contractor requests to work night shifts, will there be any noise restrictions in certain areas (hammer drill and coring)?

<CSC> Yes, work in living units will be restricted to days and evenings. Work in other areas of the institution can be accommodated 24/7. This question was asked in the site bidders meeting.

Q74 – I have been working with Genetec and have been advised that Genetec Omnicast Ver 4.X is not supported with Cold Store storage solution, only Genetec Security Centre 5.1 and higher is supported.
Can you please confirm that the entire site is to be upgraded to Genetec Security Center?

<CSC> The CSC has consulted with Genetec and has confirmed the compatibility of both technologies in a CSC-CCTV environment.

Service correctionnel du Canada
Direction des services techniques
Division des systèmes électroniques

ES/NE-0804
3e révision
17 avril 2009

NORMES EN ÉLECTRONIQUE

SYSTÈMES ÉLECTRONIQUES D'ALIMENTATION SANS COUPURE

Préparé par :

Gestionnaire,
Recherche des systèmes électroniques

Approuvé par :

Directeur,
Services d'ingénierie
17 Apr 09

REGISTRE DES MODIFICATIONS

Révision	Paragraphe	Observation
3	6.11	Entrer en MODE DE DÉRIVATION en cas de panne d'équipement

1.0 OBJET

La présente norme définit les exigences techniques et de rendement du Service correctionnel du Canada (SCC) pour l'utilisation d'une alimentation sans coupure (ASC) dans les établissements correctionnels du gouvernement fédéral.

2.0 GÉNÉRALITÉS

Les systèmes électroniques de sécurité sont raccordés à l'alimentation secteur courante (c.a.). La plupart des établissements ont des génératrices à moteur diesel/à essence pour fournir une alimentation de secours aux systèmes de sécurité essentiels afin de maintenir le fonctionnement en cas de panne de l'alimentation secteur. Normalement, le temps de réponse de la génératrice de secours pour se mettre en marche au rythme normal, stabiliser l'alimentation et la prendre en charge est trop long pour la plupart des systèmes électroniques. Pour combler l'écart entre la panne d'alimentation secteur et la réponse de la génératrice, un système ASC est utilisé. L'ASC s'arrête lorsque la génératrice est stabilisée ou que l'alimentation secteur est rétablie. L'ASC est munie de piles rechargeables qui assurent l'alimentation au moyen d'un convertisseur c.c.-c.a. Ces piles sont chargées lorsqu'elles sont raccordées à l'alimentation secteur ou à la génératrice.

3.0 CONDITIONS ENVIRONNEMENTALES

Le système ASC doit satisfaire à toutes les exigences dans les plages de fonctionnement suivantes :

3.1.1 Température : de 0 °C à 50 °C

3.1.2 Humidité : jusqu'à 95 % sans condensation

4.0 EXIGENCES D'ALIMENTATION

Le système ASC doit être rechargé par l'alimentation monophasée secteur courante (c.a.) ou l'alimentation c.a. de la génératrice de secours dans les plages de fonctionnement suivantes :

4.1 Tension : 120 V c.a. ±10 %;

4.2 Fréquence : 60 Hz ±3 %;

4.3 Transitoires : jusqu'à 5 fois les tensions nominales et pour des durées de 100 ms.

Toute modification de la source de l'alimentation d'entrée ou toute fluctuation à l'intérieur des limites ci-dessus ne doit pas causer de dommage au système, ni de changement dans son mode de fonctionnement.

5.0 EXIGENCES MÉCANIQUES

Le système ASC doit avoir des dimensions et un poids qui sont compatibles avec l'emplacement où il est prévu de l'installer, et qui permettent l'utilisation des accès inchangés en place pour son transport à l'emplacement où il sera installé.

6.0 EXIGENCES DE CONCEPTION

6.1 L'ASC doit fonctionner en mode autonome et fournir immédiatement (en un cycle) l'alimentation nominale décrite à la section 6.0 en cas de l'un ou l'autre des événements suivants :

a. perte de l'alimentation secteur;

b. alimentation secteur située à l'extérieur des limites spécifiées à la section 4.0.

6.2 L'ASC doit pouvoir fournir la charge complète pendant plus d'une heure en l'absence de l'alimentation principale ou de l'alimentation de la génératrice de secours.

6.3 Le système doit pouvoir reprendre une charge complète dans les 4 heures qui suivent le rétablissement de l'alimentation principale.

6.4 L'ASC doit fournir une alarme de faible charge des piles pour indiquer qu'il ne reste plus qu'une charge de 15 minutes des piles.

6.5 En cas de faible tension des piles, sur rétablissement de l'alimentation secteur, le système doit automatiquement vérifier l'intégrité de l'alimentation principale, fournir l'alimentation principale à la charge si elle est située à l'intérieur de limites acceptables, annuler l'alarme de faible tension des piles et recharger les piles.

6.6 Le système doit être débranché de la charge et réagir aux conditions qui suivent sans s'endommager ni endommager d'autre matériel :

a.	Surcharge momentanée :	plus de 5 s à 200 % de la charge nominale;
b.	Courte durée :	plus de 5 min à 110 % de la charge nominale;
c.	Faible tension des piles :	réglable et établie de manière à empêcher tout dommage aux piles – si cette condition se présente, le convertisseur doit aussi être éteint.

6.7 Sur rétablissement de l'alimentation secteur, le système doit revenir au mode d'attente (de relève) après avoir vérifié l'intégrité de l'alimentation secteur.

6.8 Le système doit automatiquement synchroniser la fréquence de sortie du convertisseur avec l'alimentation c.a. principale.

6.9 En mode d'attente, la synchronisation doit être continue.

6.10 En mode en ligne, le système doit synchroniser son alimentation de sortie avec l'alimentation c.a. principale après avoir vérifié l'intégrité de l'alimentation principale et avant de revenir en mode d'attente.

6.11 En cas de panne d'équipement, le système doit automatiquement entrer en MODE DE DÉRIVATION, fournissant une alimentation commerciale directement à la charge alimentée par l'équipement.

6.12 Le matériel doit être entièrement modulaire, muni d'ensembles et de cartes de circuits imprimés enfichables pouvant être remplacés sans l'utilisation de matériel d'essai. Une carte d'extension standard doit être fournie avec le matériel.

6.13 Le matériel doit être entièrement conçu et fabriqué selon des normes de qualité élevées et avoir une moyenne des temps de bon fonctionnement (MTBF) d'au moins 5 ans.

6.14 Chaque pièce d'équipement doit être munie d'une étiquette, posée en permanence à l'extérieur de l'unité, qui identifie le fabricant, le numéro de modèle ou d'ensemble, le numéro de série et l'alimentation principale requise.

7.0 EXIGENCES TECHNIQUES

L'alimentation de sortie du système ASC doit satisfaire aux exigences suivantes :

7.1	Tension :	120 V c.a. ± 5 %, réglable avec charge;
7.2	Fréquence :	60 Hz ± 3 %;
7.3	Régulation :	l'alimentation de sortie en régime permanent ne doit pas varier de plus de 2 % par rapport à la tension nominale pour des variations de la charge de 0 à 100 % de la charge nominale;
7.4	Bruit à la sortie :	moins de 1 V c.-à-c.;
7.5	Facteur de puissance :	de 1,0 à 0,8, capacitif ou inductif;
7.6	Distorsion harmonique :	moins de 5 % - aucune harmonique ne doit dépasser 3 % dans toutes les conditions de fonctionnement, d'une charge nulle à une charge complète;

7.7 Filtrage : les lignes d'alimentation d'entrée et de sortie doivent être munies de filtres pour empêcher la conduction de brouillage radioélectrique jusqu'aux sous-systèmes qu'elles alimentent;

7.8 Transitoires : la tension de sortie de transitoire attribuable à des changements soudains de la charge c.a., à la tension d'entrée, à la charge de la pile ou à toute autre cause, doit être inférieure à ± 10 % de la tension nominale et revenir à un niveau normal en 3 cycles;

7.9 Synchronisation : la fréquence de sortie doit automatiquement se synchroniser avec la fréquence d'entrée principale si elle est située entre 58,5 et 61,5 Hz.

8.0 EXIGENCES FONCTIONNELLES

8.1 Le système doit fournir une indication visuelle pour les conditions suivantes : INVERTER ON (convertisseur sous tension), MAINS POWER OFF (alimentation principale hors tension), BATTERY DISCHARGING (pile en voie de décharge), BYPASS STATUS (état de dérivation) et LOW BATTERY ALARM (alarme de faible charge de pile).

8.2 Le système doit fournir des sorties sous la forme de fermetures à contact sec pour les conditions suivantes : SYSTEM FAILURE (panne du système), MAINS POWER OFF/ON (alimentation principale coupée/raccordée), BATTERY DISCHARGING (pile en voie de décharge), SYSTEM BYPASSED (système mis en dérivation) et LOW BATTERY ALARM (alarme de faible charge de pile).

8.3 Le système doit être muni des commandes suivantes : MANUAL BYPASS SWITCH (interrupteur manuel de dérivation), DC BREAKER (disjoncteur c.c.), INVERTER ON/OFF (convertisseur sous tension/hors tension) et CHARGER FLOAT/EQUALIZE (sélecteur d'entretien/égalisation du chargeur).

8.4 Le système doit être muni de dispositifs de mesure pour donner les indications suivantes : BATTERY VOLTAGE (tension de pile), BATTERY CHARGED/DISCHARGE CURRENT (courant de charge/décharge de pile), AC LOAD VOLTAGE (tension de charge c.a.) et AC LOAD CURRENT (courant de charge c.a.).

9.0 BROUILLAGE

Le fonctionnement du système ASC ne doit pas être touché par la présence et l'utilisation d'appareils électroniques courants à l'établissement. Les distances minimales sont les suivantes :

9.1 Émetteurs-récepteurs du SRG à 1 m ou plus;

9.2 Émetteurs-récepteurs VHF et UHF à 1 m ou plus;

9.3 Autres appareils RF de réception ou d'émission à 1 m ou plus.

Le système ne doit pas causer de brouillage aux appareils électroniques courants utilisés à l'établissement.

10.0 SÉCURITÉ

L'ASC doit satisfaire aux exigences de la CSA et de l'UL relative au matériel de conversion de courant dans des conditions contrôlées.

- FIN DU TEXTE -