ExMC/1303/DV
November 2017

INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES (IECEx SYSTEM)

Title: Re-assessment and Scope Extension Report for the continued acceptance of QPS Evaluation Services Inc an Accepted Certification Body, (ExCB), and an Accepted Ex Testing Laboratory (ExTL) within the IECEx System, Equipment Scheme 02.

Circulation to: Members of the IECEx Management Committee, ExMC

INTRODUCTION

In accordance with the 5 year re-assessment plan for the surveillance and monitoring of bodies within the IECEx System, this document contains the IECEx Re-assessment and Scope Extension Report for the continued acceptance of QPS Evaluation Services Inc. as an Accepted Certification Body (ExCB) and an Accepted Ex Testing Laboratory (ExTL) within the IECEx System, Equipment Scheme 02.

During the re-assessment the IECEx Assessment Team took the opportunity to also assess QPS Evaluation Services Inc facilities, equipment and competence to undertake testing and certification to the Standards –

- IEC 60079-28 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
- IEC/TS 60079-40 Explosive atmospheres - Part 40: Requirements for process sealing between flammable process fluids and electrical systems

Please consider the assessment report and return the completed voting form by **2017 12 11** (A separate Word document) to the Secretary chris.agius@iecex.com

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IEC System for certification to standards relating to equipment for use in Explosive Atmospheres (IECEx System)

IECEx Assessment Report Form

IECEx Assessment Report Form for use by IECEx Assessment Teams to report Assessments conducted according to the IECEx Assessment Procedures of

a) Operational Document IECEx OD 003-2 for the Certified Equipment Scheme
b) Operational Document IECEx OD 316-5 for the Certified Service Facility Scheme
c) Operational Document IECEx OD 422 for the IECEx Conformity Mark Licensing System

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IECEx ExCB/ExTL Assessment Report for:

QPS Evaluation Services Inc

81 Kelfield Street, Unit 8
Toronto, Ontario M9W 5A3
Canada

CONTENTS

(Update when report is complete – by right click, Update field, Update entire table)

1 Assessment information

1.1 Type of Body covered by this assessment: <retain appropriate marks>

ExCB for IECEx Certified Equipment Scheme	✓
ExTL for IECEx Certified Equipment Scheme	✓
ExCB for IECEx Certified Service Facilities Scheme	
ExCB for IECEx Conformity Mark Licensing System	

1.2 Type of assessment: <retain appropriate marks>

Pre-assessment for candidate body	
Initial assessment for candidate body	
Surveillance	
Re-assessment	✓
Scope extension	✓

1.3 Details of body

1.3.1 Country

Canada

1.3.2 Name of body

QPS Evaluation Services Inc.

1.3.3 Name and title of nominated principal contact

Name	Title	E-mail address
Nick Maalouf	Vice President, QA & External Affairs	nmaalouf@qps.ca Tel: +1 416 241 8857 Fax: +1 416 241 0682

1.4 Assessment information

1.4.1 Members of the assessment team

Name	Role (modify as necessary)
Jianping Xu	IECEx lead assessor and team leader
Bernard Piquette	IECEx expert assessor

1.4.2 Place(s) of assessment

QPS Evaluation Services Inc.	81 Kelfield St, Unit 8 Toronto, Ontario M9W 5A3 Canada

1.4.3 Assessment date(s)

27- 29 June 2017

1.5 Application information

Date of application: 27 February 2017 (for a scope extension of IEC 60079-28 and IEC 60079-40)

1.6 Scopes

1.6.1 ExCB scope for equipment certification scheme

Number	Title	Comments, e.g. if scope change
IEC 60079-0 Edition 6	Explosive atmospheres - Part 0: Equipment - General requirements	
IEC 60079-1 Edition 7	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures “d”	
IEC 60079-2 Edition 6	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure “p”	
IEC 60079-5 Edition 4	Explosive atmospheres - Part 5: Equipment protection by powder filling “q”	
IEC 60079-6 Edition 4	Explosive atmospheres - Part 6: Equipment protection by oil immersion “o”	
IEC 60079-7 Edition 5	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	
IEC 60079-11 Edition 6	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i”	
IEC 60079-13 Edition 2	Explosive atmospheres - Part 13: Equipment protection by pressurized room “p” and artificially ventilated room “v”	
IEC 60079-15 Edition 4	Explosive atmospheres – Part 15: Equipment protection by type of protection “n"	
IEC 60079-18 Edition 4	Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”	
IEC 60079-25 Edition 2	Explosive atmospheres – Part 25: Intrinsically safe electrical systems	
IEC 60079-26 Edition 3	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga	
*IEC 60079-27 Edition 2	Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO)	
IEC 60079-28 Edition 2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation	**Scope extension**
IEC 60079-29-1 Edition 2	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases	
IEC 60079-30-1 Edition 1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	
IEC/IEEE 60079-30-1 Edition 1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	
IEC 60079-31 Edition 2	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"	

Number	Title	Comments, e.g. if scope change
IEC 60079-35-1 Edition 1	Explosive atmospheres – Part 35-1: Caplights for use in mines susceptible to firedamp – General requirements – Construction and testing in relation to the risk of explosion	
IEC/TS 60079-40 Edition 1	Explosive atmospheres - Part 40: Requirements for process sealing between flammable process fluids and electrical systems	**Scope Extension**
*IEC 61241-0 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements	
*IEC 61241-1 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosure “tD”	
*IEC 61241-11 Edition 1	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety “iD”	
*IEC 62013-1 Edition 2	Caplights for use in mines susceptible to firedamp - Part 1: General requirements - Construction and testing in relation to the risk of explosion	
*IEC 62013-2 Edition 2	Caplights for use in mines susceptible to firedamp - Part 2: Performance and other safety-related matters	
DS 2015/001A	IECEx Assessment and Certification of Equipment Assemblies	

NOTE 1 Standards shown with an asterisk (*) are superseded standards

NOTE 2 Unless otherwise indicated, earlier editions of standards (even if with a different number) are considered to be covered in the above scope for the purposes of the assessment.

NOTE 3 The above list highlights any extension of scope in the list above for new standards or later editions of standards already in scope.

1.6.2 ExTL scope

The QPS ExTL is integral with the ExCB and the ExTL scope is the same as for the ExCB.

2 Common information

2.1 Legal entity of body

QPS Evaluation Services Inc. is an independent, privately owned testing, certification, and inspection organization duly incorporated on under the Canada Business Corporation Act., as a for-profit organization providing independent third-party conformity assessment services. Management personnel receive no financial benefits from producers, suppliers or vendors of any product tested and certified by QPS. Trade associations and clients of QPS have neither control nor influence over QPS policies or the employment security of its employees.

Documents issued in 1998 supporting the establishment of QPS Evaluation Services Inc. as a legal entity were viewed. The current legal registration of the company was also viewed, and noted the business scope covering conformity assessment activities.

2.2 Financial support

QPS Evaluation Services Inc. does not receive any financial support, and relies on fees charged to applicants for testing, certification, inspection and evaluation services.

2.3 History

Established in 1995, QPS Evaluation Services Inc. is an independent third-party testing, certification and field evaluation body headquartered in Toronto, Ontario Canada.

In 1999, QPS established a test laboratory to provide testing services for customers seeking CSA, UL and other NRTL certification. In 2003, QPS expanded its test laboratory and obtained national accreditation from the Standards Council of Canada (SCC) as a Testing Organization.

In 2004, QPS obtained national (SCC) accreditation as a Certification Body, and in 2005, achieved full recognition of its Certification Mark and program by all Provincial and Territorial authorities across Canada.

In 2007, QPS was accepted in the IECEx Certified Equipment Scheme as an ExCB and an ExTL. It underwent a successful re-assessment in 2012.

Currently, QPS employs about 110 people in total, and offers a full complement of certification, testing, inspection services. Currently the principal Lines include:

- Testing & certification of all types of electrical/electronic products for the Canadian and US market;
- Field Evaluation for the Canadian and US market;
- Energy Efficiency testing and certification for the Canadian and US market;
- Testing and Certification to IEC standards for the global market, using the international IECEx Scheme for equipment used in explosive atmosphere; and the IECEE/CB Scheme for all other electrical/electronic products;
- Field Certification and Unit Verification of equipment used in explosive atmospheres;
- Assistance in obtaining ATEX approvals;
- Assistance in obtaining MSHA approvals;
- CE Marking consultation and testing to all major European Directives;
- A variety of customized testing/engineering services.

2.4 Documentation

2.4.1 Quality manual

QPS established a comprehensive quality management system according to ISO/IEC 17025, ISO/IEC 17065 and etc., mainly consisting of 3 Sections.

- **Section 1 - Quality Policy Manual (QPM), Revision No. 05:** It contains the quality system elements, and the company's overarching corporate quality policies, objectives, and commitment to quality.
- **Section 2 – Operating Procedures Manual (OPM), Revision No. 12:** It contains operational policies, practices, and procedures pertaining to the various conformity assessment activities, programs, and services offered by QPS.
- **Section 3 – Quality Support Documents (QSDs):** They consist of formal series documents used in support of testing and certification activities such as application forms, checklists, test report forms, work instructions, service agreement, etc.

It was noted that the Operating Procedures Manual (OPM) and its referenced procedures include IECEx testing and certification activities, which fulfils the requirements of the IECEx system.

2.4.2 Procedures

QPS has numerous procedures for all services provided. The Operating Procedures are grouped in three categories as follows:

- **General Operating Procedures (GOP):** They contain requirements and procedures that apply to, and overlap all conformity assessment operating activities. They also cover special procedures for Field Evaluation and for handling IECEE and IECEx System work.
- **Laboratory Operating Procedures (LOP):** Contain requirements and procedures that pertain to the laboratory and testing related activities.
- **Certification Operating Procedures (COP):** They contain requirements and procedures for certification related activities, including factory follow up inspections.

All the procedures are referenced by quality manuals, and available for relevant staff via intranet. There is a dedicated general operating procedure GOP 29/Rev.01 “Processing IECEx Scheme Projects” as well as its associated working instruction QSD 340/Rev.00 “IECEx Activities”, and noted they did not include all the relevant IECEx requirements by proper incorporation with IECEx rules, operational procedures and ExTAG Decision Sheets where relevant, for example, OD 033, OD 034. This has been subsequently resolved to the satisfaction of the assessment team.

2.4.3 Work instructions

QPS has many work instructions for various conformity assessment activities. In Ex field, there is an updated series of working instructions named as Test Data Package (TDP) for testing purpose of specific IEC standards, which are available for Staff in the company intranet at the time of assessment visit.

Examples of the working instructions were reviewed, and noted that for complex tests such as the spark ignition test in intrinsic safety, the test data package do not provide sufficient information to be able to perform the test consistently. This has been subsequently resolved to the satisfaction of the assessment team.

2.4.4 Records (including test records where relevant)

QPS has established documented procedures to specify the requirements on records. They are the procedures GOP 03/Rev.03 “Security and Control of Electronic Data and Reports” and GOP 14/Rev. 03 “Records”.

Examples of testing and certification records were checked, and found the archive of records is complete with necessary information as specified by QPS’s quality management system.

All records related to Ex testing and certification activities are retained electronically for a minimum of 10 years, and saved on the secure and daily backed-up company servers. These arrangements fulfil IECEx requirements.

2.4.5 Document change control

The requirements on document change control for both technical and management documents are addressed in the procedure GOP 04/Rev. 02 “Documentation Control”. Staff are notified of all changes to documents.

At the time of assessment visit, QPS maintained a complete package of current IEC standards used for IECEx operation, but the assessment team noted the edition of the standards did not

correctly match with the scope accepted in IECEx Certified Equipment Scheme. This has been subsequently resolved to the satisfaction of the assessment team.

2.5 Confidentiality

The detailed requirements on confidentiality and impartiality are addressed in the procedures GOP 02/Rev.01 “Confidentiality” and GOP 01/Rev.01 “Communications and Service to the Clients”.

According to the procedures and QPS Quality Policy Manual, all employees staff, contractors as well as members of committees (such as Certification Committee and Impartiality Committee) are required to sign agreements on confidentiality and declaration on impartiality and conflict of interests. Examples of agreements and/or declarations with relevant personnel were reviewed and found appreciate in meeting QPS’ management requirements as well as IECEx requirements.

2.6 Publications (Hard cover and Electronic)

QPS has not any hard copy publications. QPS advertises its services at website www.qps.ca, providing information to their customers. QPS has a product directory of products certified by QPS available on the website under product directory.

2.7 Recognition and agreements

a. In Canada:
Accredited by SCC (the Standards Council of Canada) as a Certification Body, and Field Evaluation Inspection Body and recognized by all electrical inspection authorities.

b. In the USA:
- Accredited by OSHA as a Nationally Recognized Testing Laboratory (NRTL);
- Accredited by A2LA (American Association of Laboratory Accredited) as a Testing Laboratory;
- Accredited by IAS (International Accreditation System) as a Certification Body, and Field Evaluation Body.

c. Internationally:
- Participation in the IECEE CB Scheme as a NCB and a CBTL;
- Participation in the IECEx Equipment Scheme as an ExCB and ExTL;
- Participation in the IECEx Personnel Certification Scheme as an ExCB.

2.8 Internal audit and periodic management review

2.8.1 Internal audit

QPS has a defined procedure for internal audits (GOP 05/Rev. 03 “Internal Audits”) and GOP 29/Rev.01 “Processing IECEx Scheme Projects”. QPS conducts internal audits on an annual basis. At the time of the assessment visit, the last internal audit was completed on December 30, 2016.

The records were reviewed, and noted there were seven non-conformities raised related to internal audits. The corresponding corrective actions have being taken as scheduled.

2.8.2 Management Review

QPS has procedures for management reviews. They are GOP 10/Rev. 04 “Management Review” and QSD 10/Rev. 03 “Management Review Meeting Report”. QPS conducts

management review on an annual basis. At the time of the assessment visit, the last review was completed on January 19, 2017.

The minutes were reviewed during the assessment. Main senior personnel were present at the meeting. Reference to IECEx was included in the report. The management review system meets the requirements of IECEx.

2.9 Contracting, subcontracting, use of other labs and use of other locations

QPS has procedures for subcontracting (GOP 13/Rev. 05 “Subcontracting of Testing”). At the time of the assessment visit there are no IECEx testing activities subcontracted or witnessed. QPS advised that they are aware of the subcontracting process according to OD 024 and the obligation to declare possible subcontracting in the ExTR, and a reference to OD 024 is clearly included in the document QSD 340/Rev. 00 “IECEx Activities – Working Instruction”.

In addition, QPS also advised that a contractor is utilized to carry out IECEx manufacturer auditing when needed. A signed agreement on confidentiality was reviewed during assessment and found to be satisfactory.

2.10 Training and competence

Training and competence is addressed in Clause 20 of the Quality Policy Manual (QPM), and the procedure GOP 16/Rev. 05 “Personnel, Training and Qualification of Technical Staff”.

All staff employed are selected for qualifications and/or experience relevant to their responsibilities. The detailed training process is described in QSD No. 906 which deals with the Training Master Plan. Training records are kept in the personnel file.

There is a competency matrix that identifies qualified personnel for a given IEC standard, including standards used to handle IECEx related work. A copy of the matrix is included in the site assessment report.

The system clearly indicates the competence of ExCB and ExTL staff, and the competency matrix was verified by the assessment team during the assessment, but the assessment team noted that some of specialists working in ExCB will take the ExTL roles of test and assessment for products, there is provision in the quality management system, however there is no reference to this requirement in specific IECEx procedure. This has been subsequently to be resolved to the satisfaction of the assessment team.

2.11 Complaints and appeals (including appeals to IECEx)

There are documented procedures to deal with complaints and appeals (GOP 09/Rev. 02 “Appeals Process”, GOP 06/Rev. 03 “Complaints” and GOP 29/Rev.01 “Processing IECEx Scheme Projects”).

There is a register for complaints and appeals. At the time of the assessment visit there were none logged in Ex field.

The procedures include provision for appeals to IECEx. Especially by using a standardized statement via a document QSD 07Ex/Rev.01 “Ex Service Agreement”, it makes provision to advise all applicants of their right of the appeal to IECEx. This meets the requirements of IECEx system.

2.12 Commenting on ExTAG Documents

Evidence was shown that QPS is circulating ExTAG decision sheets internally and commenting on them when necessary.

2.13 Special facts to be noted

None

2.14 Supporting documentation

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat. These are included in a site assessment report and include:

- Details of issues raised and how these have been resolved
- Checklist for ISO/IEC 17065
- Checklist for ISO/IEC 17025
- Completed technical capability document (TCD) for the scope of acceptance
- Staff competency matrix
- List of subcontractors
- Photos of the facilities/tests witnessed
- Assessors' notes

2.15 Recommendations

Based on the assessment performed on 27-29 June 2017 and subsequent corrective actions, QPS is recommended for continued acceptance in the IECEx System as:

- An ExCB in the IECEx Certified Equipment Scheme
- An ExTL in the IECEx Certified Equipment Scheme

This is according to the scope of the standards listed in this document, including the extension of scope.

Jianping Xu	**Bernard Piquette**
Lead Assessor	**Expert Assessor**

Date: 22 October 2017

3 ExCB for IECEx Certified Equipment Scheme

3.1 Assessment references

a) IECEx 02 IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure

b) OD 003-2 Assessment, surveillance assessment and re-assessment of ExCBs and ExTLs operating in the IECEx 02, IECEx Certified Equipment Scheme

c) ISO/IEC 80079-34 Edition 1, Explosive atmospheres – Part 34: Application of quality systems for equipment manufacture

d) OD 009 Issuing of CoCs, ExTRs and QARs

e) IECEx Document OD 025 Guidelines on the Management of Assessment and Surveillance programs for the assessment of Manufacturer's Quality Systems in accordance with the IECEx Scheme

f) OD 026 IECEx Certified Equipment Scheme – Guidelines for the qualification of Lead Auditor and Auditors, in accordance with the IECEx System

g) ISO/IEC 17065 General requirements for bodies operating product certification systems

h) IECEx Technical Capability Documents (TCD)

i) ExTAG decision sheets (DSs)

NOTE The latest editions of the above documents were applied

3.2 Candidate ExCB persons interviewed

Name	Position
John S. Gulino	President
Nick Maalouf	Vice President, QA & External Affairs
Jim Morrison	Vice President, Field Evaluation/Engineering, Chief of Engineering
Dave Adams	Manager, Hazardous Locations (Ex equipment) Department
Alfonso Mattucci	Accreditation Manager
Rob Kohuch	Senior Engineer, Hazardous Location Department
Dori O'Kane	QA & OHS Manager
Donna Koopstra	QA Co-ordinator

3.3 Associated ExTL(s)

The QPS ExTL is integral with the ExCB.

The QPS ExTL has been accepted in the IECEx Scheme as an ExTL since 2007. It is located at the same address as the ExCB.

3.4 Associated certification functions

In Canada, QPS is accredited by the Standards Council of Canada (SCC) as a Certification, Testing and Inspection Body with the right to certify products including Ex equipment for the Canadian market.

In the USA, QPS is accredited by the Occupational Safety and Health Administration (OSHA) as a Nationally Recognized Test Laboratory (NRTL), and by IAS (the International Accreditation Service). As such, QPS is authorized to certify products including Ex equipment for the US market under either of the above mentioned accreditation systems.

3.5 National marks and certificates

The c-QPS and c-QPS-us marks for certification for Canada and the United States are used for products certified, and a certificate of compliance is issued authorizing the client to use the applicable QPS mark.

3.6 Standards accepted

See clause 1.6 of this report

3.7 National differences to IEC standards

National differences to IEC standards are those listed in the latest version of the IECEx Scheme Bulletin.

3.8 Organisation

3.8.1 Names, titles and experience of the senior executives

Name	Title	Experience
Nick Maalouf	VP/QA and Regulatory	12 years at QPS, 30 plus years in Ex

3.8.2 Name, title and experience of the quality management representative

Name	Title	Experience
Dori O'Kane	QA Manager	20 years at QPS, 20 years in QA.
Alfonso Mattucci	Accreditation Manager	10 years at QPS, 2 years in Ex

3.8.3 Name and title of signatories for certification

Name	Title	Comments
Dave Adams	Manager, Hazardous Locations (Ex equipment) Department	6 years at QPS, 35 plus years in Ex

3.8.4 Other employees in ExCB activity

Name	Title	Responsibility and Experience in Ex
Dave Adams	Manager, Hazardous Locations	6 years at QPS, 35 plus years in Ex, Signatory, Senior Technical Engineer
Rob Kohuch	Senior Engineer	5 years at QPS, 15 years in Ex, Lead Technical Engineer, QAR Auditor
Kerry Nice	Engineer	12 years at QPS, 10 years in Ex, IS Expert
Alenko Vranes	Engineer	4 years at QPS, 20 years in Ex, Ex d Expert
Alfonso Mattucci	QC Engineer	10 years at QPS, 2 years in Ex, Lead Auditor (non-technical), QA/QC
*Jeff Olson	Contractor as Auditor	1 years for QPS, 35 years

Name	Title	Responsibility and Experience in Ex
		in Ex, QAR Auditor
Note: * denotes sub-contractor		

3.9 Organizational structure

QPS provides the following lines of services:

- Product Safety Testing and Evaluation;
- Product Performance Testing;
- Product Certification;
- Field Evaluation/Special Inspections;
- Electromagnetic Compatibility Testing and Evaluation;
- Regulatory Compliance Verification;
- Custom Testing and Attestation;
- Quality System Assessment.

Annex A of this report indicates the overall organizational structure of QPS, and Annex B of this report particularly indicates the organizational chart of IECEx operation at QPS.

3.10 Administration

3.10.1 Administrative structure

QPS has a customer service department that works closely with the ExCB and ExTL.

See Annex A and Annex B of this report.

3.10.2 Indemnity insurance

QPS holds indemnity insurance from South Western Group Insurance - Professional Liability (Policy No SWG1012491). The document was reviewed and valid to March 18, 2018.

3.11 Resources

The laboratory and offices are located in an industrial unit which provides an adequate environment for the work. The appropriate testing equipment is suitable for the range of tests carried out in house.

QPS has well experienced personnel to fulfil all requests which fall within its scope of accreditation for testing, evaluations and certification activities.

3.12 Committees (such as governing or advisory boards)

In addition to participation in the Canadian Advisory Council on Electrical Safety (CACES) and Advisory Council on Electrical Safety (ACES), two committees have been established as described in Clause 9.2 and 9.3 of the Operating Procedures Manual (OPM), and the Terms and Reference are detailed in Quality Support Documents (QSD) No. 04 and 969. The first one is the independent and balanced Certification Committee (CC), which is comprised of representatives from industry, regulatory authorities, consumers, users and others. Members of the CC are selected by QPS Executive officers and are subject to QPS's confidentiality policy. The second is the Impartiality Committee, which is responsible for providing guidance and advice on the formulation of policies relating to impartiality of the conformity assessment activities of QPS.

The committees meet once a year. The last combined Certification & Impartiality meeting took place on October 21, 2016. The minutes were viewed and the topics covered found to meet the requirements of ISO/IEC 17065 and QPS' quality management system.

3.13 Certification operations

3.13.1 National approval/certification methods

National approval and certification methods are clearly stipulated in QPS' QMS, and are in accordance with 17065 and 17025 in junction with any additional requirements stipulated by the accrediting accreditation body (e.g SCC, OSHA, IAS, IECEx, IECEE).

As described in the company's operating procedures manual (OPM), QPS mainly operates two national certification programs, ISO Type 1 and ISO Type 3. Both programs involve testing and evaluation of submitted products and issuance of a certificate of compliance granting the use of the QPS registered certification mark for compliant products. The mark is recognized in Canada and USA.

3.13.2 Certification policy

The Certification Policy is described in Clause 23 and 25 of the Quality Policy Manual (QPM). Additional policies and procedures are described in the Operating Procedures Manual (OPM). The IECEx certification policy and procedures are described in the general operating procedure GOP 29/Rev.01 "Processing IECEx Scheme Projects". Those were appropriate in compliance with IECEx 02 and ISO/IEC 17065.

3.13.3 Application for certification

The general procedure on application for certification and contract review is addressed in Clause 13.2 of the Operating Procedures Manual (OPM).

QPS has various applications for certification for different services and programs (e.g.- QSD 20Ex - Ex Application). The quote/application process is described in the general operating procedure GOP 11/Rev. 03 "Contract Review". QPS issues a quote based on information supplied by the applicant as per a Request for Quote (RFQ) form which is available on QPS's website www.qps.ca. Upon acceptance of the quote, the applicant is asked to sign a formal service agreement.

3.13.4 Certification decision

The certification decision is done at QPS as described in Clause 13.6 of the Operating Procedures Manual (OPM) and the procedure COP 01/Rev. 06 "Certification Decision and Associated Records". The relevant requirements for IECEx were properly incorporated in QSD 340/Rev.00 "IECEx Activities – Working Instructions".

3.13.5 Suspension and cancellation of certificates

The procedures for suspension and cancellation of certificates are addressed in the general certification operating procedure COP 10/Rev. 02 "Misuse of Mark & Suspension, Withdrawal of Certification". But the assessment team noted that IECEx requirements were not properly incorporated in the procedure. This has been subsequently resolved to the satisfaction of the assessment team.

In addition, up to the time of the assessment it was advised that there were two certificates cancelled and one certificate suspended according to IECEx requirements.

3.14 Certificates issued

Number of certificates issued under for the preceding four years for each type of protection. For new applications these should be for national or regional schemes and for currently accepted bodies IECEx certificates should be shown (certificates for other schemes may also be shown):

Standard numbers	Type of protection or other identifying information	Number of issued certificates (for last 4 years)				
		2014	2015	2016	2017	Total
IEC 60079-0	Explosive atmospheres - Part 0: Equipment - General requirements	9	21	24	10	64
IEC 60079-1	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures “d”	5	7	7	5	24
IEC 60079-2	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure “p”	0	2	2	2	6
IEC 60079-5	Explosive atmospheres - Part 5: Equipment protection by powder filling “q”	0	0	0	0	0
IEC 60079-6	Explosive atmospheres - Part 6: Equipment protection by oil immersion “o”	0	0	0	0	0
IEC 60079-7	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	1	4	1	1	7
IEC 60079-11	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i”	5	9	8	3	25
IEC 60079-13	Explosive atmospheres - Part 13: Equipment protection by pressurized room “p” and artificially ventilated room “v”	0	0	0	0	0
IEC 60079-15	Explosive atmospheres – Part 15: Equipment protection by type of protection “n"	2	3	9	6	20
IEC 60079-18	Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”	3	2	2	0	7
IEC 60079-25	Explosive atmospheres – Part 25: Intrinsically safe electrical systems	0	0	0	0	0
IEC 60079-26	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga	1	2	2	0	5
IEC 60079-27	Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO)	0	0	0	0	0
IEC 60079-28	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation	0	0	0	0	0
IEC 60079-29-1	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases	0	0	0	0	0
IEC 60079-30-1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	0	0	0	0	0

Standard numbers	Type of protection or other identifying information	Number of issued certificates (for last 4 years)				
		2014	2015	2016	2017	Total
IEC/IEEE 60079-30-1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	0	0	0	0	0
IEC 60079-31	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"	0	3	6	2	11
IEC 60079-35-1	Explosive atmospheres – Part 35-1: Caplights for use in mines susceptible to firedamp – General requirements – Construction and testing in relation to the risk of explosion	1	0	0	0	1
IEC/TS 60079-40	Explosive atmospheres - Part 40: Requirements for process sealing between flammable process fluids and electrical systems	0	0	0	0	0
IEC 61241-0	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements	0	0	0	0	0
IEC 61241-1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosure “tD”	0	0	0	0	0
IEC 61241-11	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety “iD”	0	0	0	0	0
IEC 62013-1	Caplights for use in mines susceptible to firedamp - Part 1: General requirements - Construction and testing in relation to the risk of explosion	0	0	0	0	0
IEC 62013-2	Caplights for use in mines susceptible to firedamp - Part 2: Performance and other safety-related matters	0	0	0	0	0

NOTE Above include certificates to IEC 60079-0

3.15 National accreditation

In Canada: Accredited by SCC (the Standards Council of Canada) as a Certification Body, and Field Evaluation Inspection Body and recognized by all electrical inspection authorities.

In the USA:

- Accredited by OSHA as a Nationally Recognized Testing Laboratory (NRTL).
- Accredited by A2LA (American Association of Laboratory Accredited) as a Testing Laboratory.
- Accredited by IAS (International Accreditation System) as a Certification Body, and Field Evaluation Body.

The Annex C of this report is a copy of accreditation certificate to ISO/IEC 17065 issued by SCC, which is valid until 29 November 2020. The accreditation scope includes electrical

apparatus for explosive atmospheres (ICS No. 29.260.20 - Electrical Safety) as one of their scope of service.

3.16 Assessment of manufacturers and issue of QARs

The assessment of manufacturers and issuance of QARs is covered in the general operating procedure GOP 29/Rev.01 “Processing IECEx Scheme Projects” and QSD 340/Rev.00 “IECEx Activities – Working Instructions”. The procedures were reviewed and found to meet the requirements of the IECEx System. Examples of issued QARs were reviewed during the assessment. All were in meeting the requirements of QPS’ quality management system and IECEx requirements.

In addition, the “out-of-date” QARs was checked and found to be satisfactory.

3.17 Comments (including issues found during assessment)

A number of issues were raised during this assessment visit, and reported to, and accepted by, the management of QPS at the end of this assessment visit. Those mainly concern:

- Control of test and certification standards
- Incorporation of IECEx requirements
- Separation between ExCB and ExTL
- Complaints and appeals
- Unit verification
- Ex marking

All the issues relating with the ExCB were resolved to the satisfaction of the assessment team. Details of issues and how these have been resolved are listed in Annex A of the site assessment report.

4 ExTL for IECEx Certified Equipment Scheme

4.1 Assessment references

a) IECEx 02 IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure

b) IECEx OD003-2 Assessment, surveillance assessment and re-assessment of ExCBs and ExTLs operating in the IECEx 02, IECEx Certified Equipment Scheme

c) IECEx OD 009 Issuing of CoCs, ExTRs and QARs

d) ISO/IEC 17025:2005 Edition 2, General requirements for the competence of testing and calibration laboratories

e) IECEx Technical Capability Document (TCD)

f) ExTAG decision sheets (DSs)

NOTE The latest editions of the above documents were applied.

4.2 Candidate ExTL persons interviewed

Name	Position
Kerry Nice	Senior Lab Engineer
Alenko Vranes	Engineer
William Liang	Engineer
Edelma Yanes-Leons	Engineer
Jimmy Lu	Engineer
Glenn Black	Engineer

4.3 Associated ExCB(s)

The QPS ExCB is integral with the ExTL.

4.4 Organisation

4.4.1 Names, titles and experience of the senior executives

Name	Title	Experience
Nick Maalouf	VP/QA and Regulatory	12 years at QPS, 30 plus years

4.4.2 Name, title and experience of the quality management representative

Name	Title	Experience
Dori O'Kane	QA Manager	20 years at QPS, 20 years in QA
Alfonso Mattucci	Accreditation Manager	10 years at QPS, 2 years in Ex

4.4.3 Other employees in ExTL activity

Name	Title/responsibility	Experience in Ex
Rob Kohuch	Senior Engineer	5 years at QPS, 15 years in Ex, Lead Technical Engineer, QAR

Name	Title/responsibility	Experience in Ex
		auditor
Dave Adams	Manager, Hazardous Locations	6 years at QPS, 30+ years in Ex, Signatory, Senior Technical Engineer
Kerry Nice	Senior Lab Engineer	12 years at QPS, 10 years in Ex, IS Expert
Alenko Vranes	Engineer	4 years at QPS, 20 years in Ex, Ex d Expert
Edelma Yanes Leon	Engineer	3 years at QPS, 3 years in Ex, Project engineer
William Liang	Engineer	4 years at QPS, 4 years in Ex, Project engineer
Glenn Black	Engineer	2 years at QPS, 30 years in Ex, Combustible Gas Detector Expert
Jimmy Lu	Engineer	3 months in QPS, 10 years in Ex, Project engineer
Rafael Colon	Engineer	12 years at QPS, 12 years in Ex, Unit Verification of Assemblies

4.5 Organizational structure

QPS provides the following lines of services:

- Product Safety Testing and Evaluation.
- Product Performance Testing.
- Product Certification
- Field Evaluation/Special Inspections
- Electromagnetic Compatibility Testing and Evaluation.
- Regulatory Compliance Verification.
- Custom Testing and Attestation
- Quality System Assessment.

Annex A of this report indicates the detailed overall organizational structure of QPS, and Annex B particularly indicates the organizational structure of IECEx operation at QPS.

4.6 Resources

The laboratory and offices are located in an industrial unit which provides an adequate environment for the work. The appropriate testing equipment is suitable for the range of tests carried out in house.

QPS has well experienced personnel to fulfil all requests which fall within its scope of accreditation for testing, evaluations and certification activities. Test reports issued

4.7 Test Reports issued

Number of test reports (ExTRs) issued under for the preceding four years for each type of protection. For new applications these should be for national or regional schemes and for currently accepted bodies IECEx ExTRs should be shown (test reports for other schemes may also be shown):

Standard numbers	Type of protection or other identifying information	Number of issued reports (ExTRs) (for last 4 years)				
		2014	2015	2016	2017	Total
IEC 60079-0	Explosive atmospheres - Part 0: Equipment - General requirements	9	16	24	10	59
IEC 60079-1	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures “d”	2	5	6	1	14
IEC 60079-2	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure “p”	0	2	3	4	9
IEC 60079-5	Explosive atmospheres - Part 5: Equipment protection by powder filling “q”	0	0	0	0	0
IEC 60079-6	Explosive atmospheres - Part 6: Equipment protection by oil immersion “o”	0	0	0	0	0
IEC 60079-7	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	0	4	2	0	6
IEC 60079-11	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i”	3	7	8	0	18
IEC 60079-13	Explosive atmospheres - Part 13: Equipment protection by pressurized room “p” and artificially ventilated room “v”	0	0	0	0	0
IEC 60079-15	Explosive atmospheres – Part 15: Equipment protection by type of protection “n"	0	4	9	4	17
IEC 60079-18	Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”	0	2	1	0	3
IEC 60079-25	Explosive atmospheres – Part 25: Intrinsically safe electrical systems	0	0	0	0	0
IEC 60079-26	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga	1	1	2	0	4
IEC 60079-27	Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO)	0	0	0	0	0
IEC 60079-28	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation	0	0	0	0	0
IEC 60079-29-1	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases	0	0	0	0	0

Standard numbers	Type of protection or other identifying information	Number of issued reports (ExTRs) (for last 4 years)				
		2014	2015	2016	2017	Total
IEC 60079-30-1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	0	0	0	0	0
IEC/IEEE 60079-30-1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	0	0	0	0	0
IEC 60079-31	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"	0	5	6	0	11
IEC 60079-35-1	Explosive atmospheres – Part 35-1: Caplights for use in mines susceptible to firedamp – General requirements – Construction and testing in relation to the risk of explosion	1	0	0	0	1
IEC/TS 60079-40	Explosive atmospheres - Part 40: Requirements for process sealing between flammable process fluids and electrical systems	0	0	0	0	0
IEC 61241-0	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements	0	0	0	0	0
IEC 61241-1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosure “tD”	0	0	0	0	0
IEC 61241-11	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety “iD”	0	0	0	0	0
IEC 62013-1	Caplights for use in mines susceptible to firedamp - Part 1: General requirements - Construction and testing in relation to the risk of explosion	0	0	0	0	0
IEC 62013-2	Caplights for use in mines susceptible to firedamp - Part 2: Performance and other safety-related matters	0	0	0	0	0
ISO/IEC 80079-38	Explosive atmospheres - Part 38: Equipment and components in explosive atmospheres in underground mines	0	0	0	0	0

NOTE Above include reports to IEC 60079-0

4.8 National accreditation

In Canada, QPS is accredited by SCC (the Standards Council of Canada) as a Certification Body, and Field Evaluation Inspection Body and recognized by all electrical inspection authorities.

In the USA, QPS is accredited by following accreditation body:

- OSHA as a Nationally Recognized Testing Laboratory (NRTL).
- A2LA (American Association of Laboratory Accredited) as a Testing Laboratory.
- IAS (International Accreditation System) as a Certification Body, and Field Evaluation Body.

The annex D of this report is a copy of accreditation certificate to ISO/IEC 17025 issued by A2LA, which is valid until 30 November 2018. The accreditation scope was reviewed, and noted the standards IEC 60079-28, IEC 60079-40 and etc., are not currently within QPS's ISO/IEC 17025 scope, but the assessment team were advised that the standards will be included in an upcoming audit. The IECEx secretariat will verify incorporation of these standards within twelve months of this IECEx assessment. Should accreditation not be obtained QPS will be subject to Annual Surveillance.

4.9 Calibration

The calibration is addressed in the laboratory operating procedure LOP 05/Rev.02 "Calibrations". QPS outsources all calibration involving IECEx to ISO/IEC17025 accredited calibration laboratories.

As a part of quality system, there is a calibration plan annually established and implemented for all the relevant measuring instrument/equipment. Examples of calibration certificates were reviewed and verified against specific instrument/equipment, and found to be satisfactory.

4.10 Tests witnessed

The following tests were successfully witnessed during the assessment visit:

Standard and edition	Clause number	Test	Comments
IEC 60079-0:2011 Edition 6.0	26.4.5	IP6X	
IEC 60079-0:2011 Edition 6.0	26.14	Measurement of capacitance	Group IIB
IEC 60079-1:2014 Edition 7.0	15.2.2	Determination of explosion pressure (reference pressure)	Group IIB
IEC 60079-1:2014 Edition 7.0	15.2.3	Overpressure test	
IEC 60079-1:2014 Edition 7.0	15.3	Test of non-transmission of an internal ignition	Group IIB
IEC 60079-1:2014 Edition 7.0	B.1.2	Determination of maximum bubble pore test size	
IEC 60079-11:2011 Edition 6.0	10.1	Spark ignition	Group IIC
IEC 60079-11:2011 Edition 6.0	10.5.3	Temperature rise test on (high capacity) batteries	
IEC 60079-18:2014 Edition 4.0	8.1.2	Dielectric strength	
IEC 60079-28:2015 Edition 2.0	5.2.2.2	Optical power	
IEC 60079-31:2013 Edition 2.0	6.1.2	Thermal tests	ta
IEC 60079-40	5.2.3	Pressure cycling	Demonstration

Standard and edition	Clause number	Test	Comments
Edition 1.0			
IEC 60079-40 Edition 1.0	5.2.5	Burst pressure test	

4.11 Participation in IECEx Proficiency Testing Program

IECEx Proficiency Testing program (PTB ExPT Scheme)	Program years	Participated? Y/N/NA	Results in relation to assigned value	Other comments, including whether results are considered satisfactory
Program 1 "Explosion pressure"	2011-2012	Y	Acceptable	No issues
Program 2 "Spark ignition"	2011-2012	Y	Acceptable	No issues
Program 3 "Flame Transmission"	2013-2014	Y	Acceptable	No issues
Program 4 "Temperature Classification"	2013-2014	Y	Acceptable	No issues
Program 5 "Electrostatic Charge"	2015-2016	Y	Acceptable	No issues
Program 6 "Intrinsic Safety"	2015-2016	Y	Acceptable	No issues

REMARK: Kerry Nice participated in all three IECEx workshops at PTB.

4.12 Comments (including issues found during assessment)

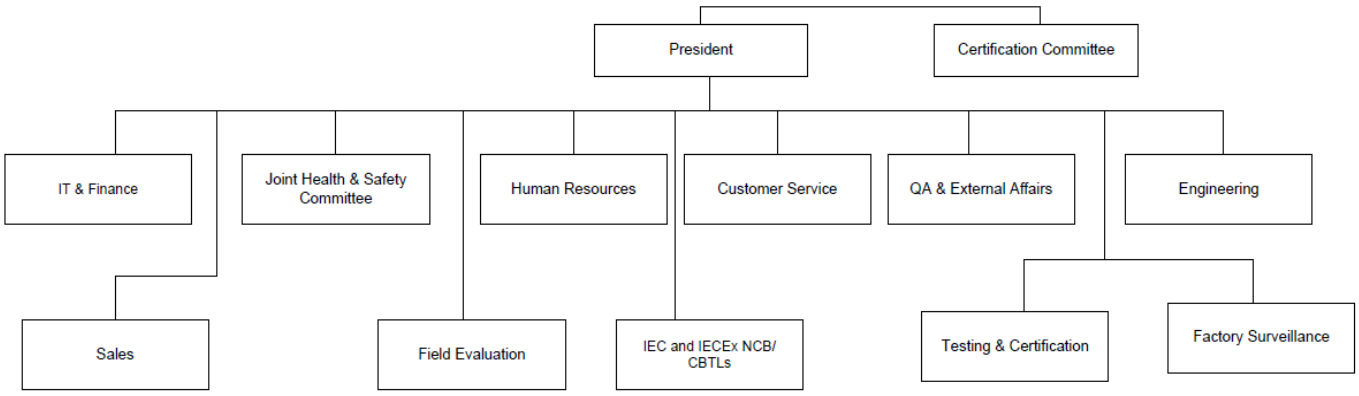
A number of issues were raised during this assessment visit, and reported to, and accepted by, the management of QPS at the end of this assessment visit. Those mainly concern:

- National accreditation scope
- Control of test and certification standards
- Working instruction
- Consumable material
- Ex marking

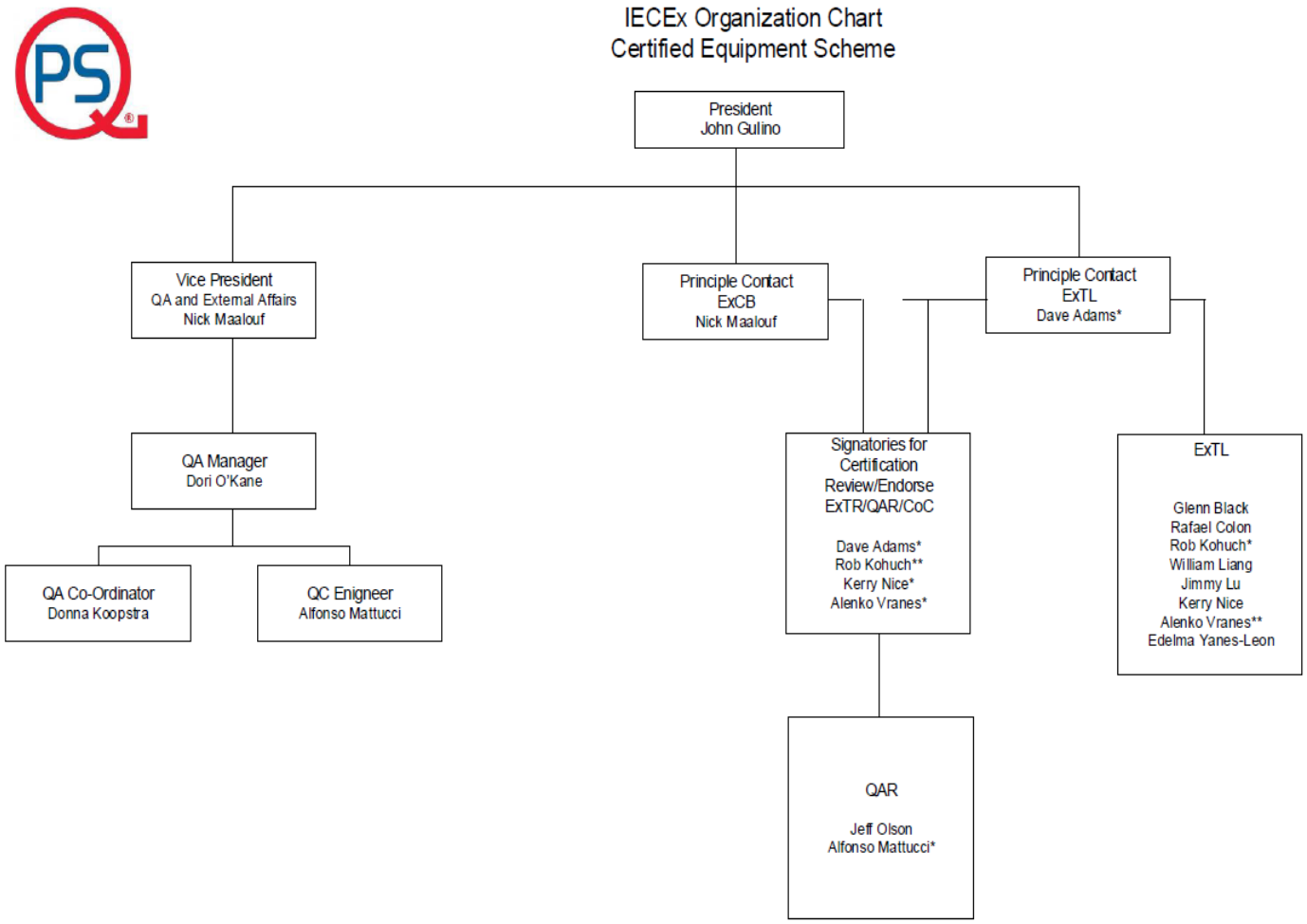
All the issues relating with the ExTL has been subsequently resolved to the satisfaction of the assessment team. Details of issues and how these have been resolved are listed in Annex B of the site assessment report.

Annex A
Overall Organisation Chart

Overall Organization



Annex B
Organisation Chart of ExCB and ExTL



Annex C
Accreditation Certificate for ISO/IEC 17065

CERTIFICATE OF ACCREDITATION

Standards Council of Canada
Conseil canadien des normes

CERTIFICAT D'ACCRÉDITATION

QPS EVALUATION SERVICES, INC.
81 Kelfield Street, Units 7-10, Toronto, ON M9W 5A3

having been assessed and found to conform with the requirements of ISO/IEC 17065:2012 and other requirements, and the conditions for accreditation established by the Standards Council of Canada (SCC) is hereby recognized as an

ayant été soumis à une évaluation et ayant été jugé conforme aux exigences d'ISO/IEC 17065:2012 et autres exigences, ainsi qu'aux conditions d'accréditation établies par le Conseil canadiens des normes (CCN), est de fait reconnu comme étant un

ACCREDITED CERTIFICATION BODY

ORGANISME DE CERTIFICATION ACCRÉDITÉ

In specific subject areas and locations identified in the scope of accreditation approved by SCC and found on the SCC website at www.scc.ca.

dans les domaines d'activité et pour les établissements indiques dans la portée d'accréditation approuvée par le CCN et figurant dans le site web du CCN au www.ccn.ca.

Accreditation number: / Numéro d'accréditation : 10048

Initial accreditation date: / Date de la première accréditation : 2004-11-29

Re-accreditation date: / Date de la réaccréditation : 2017-04-11

Expiry date: / Date d'expiration : 2020-11-29

This certificate is valid until the date of expiration unless suspended, withdrawn or superseded by SCC. / Le présent certificat est valide jusqu'à la date d'expiration, à moins qu'il ne soit suspendu, retiré ou remplacé par le CCN.

Vice-President – Accreditation Services / Vice-présidente – Services d'accréditation

To verify the validity of this certificate, please see the Directory of Accredited customers on www.scc.ca.

Pour vérifier la validité du certificat, veuillez consulter le Répertoire des clients accrédités au www.ccn.ca.

Canada

Annex D
Accreditation Certificate for ISO/IEC 17025

Accredited Laboratory

A2LA has accredited

QPS EVALUATION SERVICES, INC.

Toronto, Ontario, Canada

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the A2LA R222 - Specific Requirements - EPA ENERGY STAR Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 19th day of January 2017.

President and CEO
For the Accreditation Council
Certificate Number 3351.01
Valid to November 30, 2018

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.