



ExMC/141/R
2002 09

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC SCHEME FOR CERTIFICATION TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT FOR EXPLOSIVE ATMOSPHERES (IECEx SCHEME)

**Title: IECEx Assessment Report for the acceptance of CSA as an
Accepted Ex Test Laboratory within the IECEx Scheme**

This document contains the IECEx Assessment Report for the *Canadian Standards Association (CSA)*

Following assessment, including an on site assessment, the assessment team recommends acceptance of *Canadian Standards Association (CSA)* as an Ex Accepted Test Laboratory within the IECEx Scheme.

Accreditation Certificates covering the testing of Ex equipment are attached. The scope of accreditation is detailed in a 51page schedule that is retained by the Secretariat. An Annex C, has been added to the document, to include additional information received by the secretariat from the Team Leader, Mr Vries.

Signed copies of the assessment report have been retained by the Secretariat.

This report has been issued for consideration during the next ExMC Meeting being held in Seoul October 2002 under Item 8 of Draft Agenda ExMC/127/DA.

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IECEx ASSESSMENT REPORT FOR ExTL (Ex Testing Laboratory)

Type of Assessment:

Initial Assessment for Candidate ExTL	X
Surveillance Assessment for existing ExTL	--

1. OBJECT AND FIELD OF APPLICATION

1.1 Country: Canada

1.2 Name of Candidate ExTL: Canadian Standards Association also known as
CSA International

1.3 *Members of the Assessment Team*

Dr.-Ing. G. Arnold, Assessor (DE)
Mr. S. Halama, Assessor (FR)
Mr. L.M.J. Vries, Lead Assessor (NL)

1.4 *Place and Date of the Assessment*

CSA International carries out its testing and certification operations in the field of electrical apparatus for explosive atmospheres at the following 2 addresses:

178 Rexdale Boulevard
Toronto, Ontario
Canada M9W 1R3

and

1707 – 94th Street NW
Edmonton, Alberta
Canada T6N 1E6

Due to the accreditation status of CSA International the on-site assessment for ACB and ExTL has been carried out by the complete Assessment Team during 1 day in Toronto on March 4, 2002 and during 1 day in Edmonton on March 6, 2002.



1.5 Assessment References

Documents:

- i) IECEx 02 Edition 1997-10
- ii) IECEx Operational Document ExMC/100/CD
- iii) ISO/IEC Guide 25: 1990
- iv) IECEx Technical Guidance Documents
- v) ACB/ExTL application documents dated July 6, 2001 and last audits reports from the Standards Council of Canada received on November 19, 2001 and during the assessment.
- vi) Corrective actions report received on August 29, 2002.

1.6 Scope of Application

Product Category	Standard
<i>Electrical apparatus for explosive gas atmospheres:</i>	
General requirements	IEC 60079-0
Flameproof enclosure "d"	IEC 60079-1
Pressurization "p"	IEC 60079-2
Powder filling "q"	IEC 60079-5
Oil-immersion "o"	IEC 60079-6
Increased safety "e"	IEC 60079-7
Intrinsic safety "i"	IEC 60079-11
Non-sparking "n"	IEC 60079-15
Encapsulation "m"	IEC 60079-18
<i>Electrical apparatus for use in the presence of combustible dust:</i>	
Electrical apparatus protected by enclosure. Specification for apparatus	IEC 61241-1-1

1.7 Candidate TL Persons Interviewed

Name	Position
<u>Toronto:</u>	
Joe Gryn	Director, Conformity Assessment
John Kalinowsk	Manager Quality Assurance, Engineering Quality Assurance Certification
John Marshall	Engineering Project Manager, Engineering Quality Assurance Certification
Peter Smith	Team Coordinator, Hazardous Locations Certification
Yakov Khitrov	Senior Engineer, Hazardous Locations Product Team Certification
Bill Shao	Senior Engineer Hazardous Locations Products (Edmonton)



1.7 Candidate TL Persons Interviewed (continued)

Name

Position

Edmonton:

John Verwey

Operations Manager, Edmonton

Audrey Gagnon

Quality Assurance Representative

Gary Boswell

Senior Engineer Hazardous Locations Products

Bill Shao

Senior Engineer Hazardous Locations Products

Where necessary other CSA International staff assisted during the assessment.

1.8 Legal Entity of the Candidate TL

Independent, not-for-profit organization, incorporated under Canadian Laws.

1.9 Associated ACB

CSA International is ACB and ExTL. In Toronto as well as in Edmonton independence of testing (ISO Guide 25) and certification (ISO Guide 65) was clearly demonstrated.

1.10 Financial Support

Self-supporting by testing and certification fees.

1.11 History

The Canadian Standards Association, also known as CSA International, was established in 1919 and works in the area of standards development and the application of standards through product certification. It operates laboratories to support the product certification program. CSA's programs in product certification, laboratory testing and standards development are accredited by the Standards Council of Canada (SCC). The certification program was first accredited by SCC in June 1983.

1.12 Relevant Standards

Product Category

Standard

Electrical apparatus for explosive gas atmospheres:

General requirements

IEC 60079-0

Flameproof enclosure "d"

IEC 60079-1

Pressurization "p"

IEC 60079-2

Powder filling "q"

IEC 60079-5

Oil-immersion "o"

IEC 60079-6

Increased safety "e"

IEC 60079-7

Intrinsic safety "i"

IEC 60079-11

Non-sparking "n"

IEC 60079-15

Encapsulation "m"

IEC 60079-18



1.12 *Relevant Standards* (continued)

Product Category	Standard
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Electrical apparatus for use in the presence of combustible dust:
Electrical apparatus protected by enclosure. Specification for apparatus

IEC 61241-1-1

2. ORGANISATION

2.1 *Names, Titles and Experience of the Senior Executives*

Name	Title	Experience
<u>Toronto:</u>		
Irma Vescan	Director, Canadian Operations	25 years in testing and certification
Nick Alfano	Operations Manager, Electrical Equipment & Inspections	20 years in field services
<u>Edmonton:</u>		
Irma Vescan	Director, Canadian Operations	25 years in testing and certification
John Verwey	Operations Manager	2 years in testing and certification and 20 years in hazardous materials/pressure vessel industry

2.2 *Name, Title and Experience of the Quality Management Representative*

Name	Title	Experience
<u>Toronto:</u>		
John Kalinowski	Manager, Quality Assurance, EQA Certification	10 years in Quality Assurance
<u>Edmonton:</u>		
Audrey Gagnon	Quality Assurance Representative	9 years in Quality Assurance

2.3 *Name and Title of Nominated Principal Contact*

Name	Title	Comments
Joe Gryn	Director, Conformity Assessment	



2.4 *Employees*

Records are kept which include the training and qualifications of the technical staff.

2.5 *Organisational Structure*

The total number of number of employees within the CSA Group and within CSA International are 1100 and 670 resp. The number of employees in the Hazardous Locations Team in Toronto and in Edmonton are 27 and 21 resp. The organization diagrams are shown in Annex 1.

3. RESOURCES

CSA International has all necessary resources for its operation in-house.

TEST METHODS

4.1 *Procedures*

The procedures are in Divisional Quality Documents (DQD's) at 400, 500 and 600 level (see item 7.1) and are operated accordingly.

4.2 *Staff Work Instructions*

Detailed activity guidelines which list staff work instructions are in the DQD's at 400 Level and are operated accordingly.

5. TEST REPORTS AND RECORDS

5.1 *Test Reports issued*

Test reports issued during the past 2 years:

	<u>Toronto</u>	<u>Edmonton</u>
flameproof d	120	300
intrinsic safety i	100	300
increased safety e	15	15
oil filled	0	1
powder filled q	0	0
encapsulation m	20	20
non-sparking n	20	200
pressurized p	30	30
apparatus for dusts	200	45



5.2 Test Records

The procedures are in DQD 050, Section 12.0 and DQD 335 and are operated accordingly. All test records are kept in cabinets in a protected central archive.

6. CALIBRATION

The procedures are in DQD 050, Section 20.0 and DQD 411 and are operated accordingly. All measurement and test equipment is duly calibrated on a regular basis and traceable to (inter)national standards.

7. DOCUMENTATION

7.1 *Quality Manual*

The Quality Management System complies with ISO/IEC Guide 25. The following documentation system is maintained:

At Corporate Level (CSA Group):

1. Corporate Quality Management System Manual
2. Policies and Practices Manual (DQD 030)

At CSA International Level (Division Testing and Certification):

3. Quality Management System Manual (DQD 050)
4. DQD 000 Level – Manuals and Indexes
5. DQD 100 Level – Engineering Policy Supplements
6. DQD 200 Level – Certification Division Programs and Services
7. DQD 300 Level – Guidelines for Quality and Technical activities
8. DQD 400 Level – Detailed Activity Guidelines
9. DQD 500/600 Level – Forms, Templates and Data

CSA International in Toronto and Edmonton have been audited against ISO/IEC 17025 by the Standards Council of Canada. Final certification is expected before the end of 2002.

7.2 *Document Change Control*

The procedures are in DQD 050, Section 6.0 and are operated accordingly.

8. CONFIDENTIALITY

The procedures are in DQD 050, Section 12.0 and in DQD 335, Section 4.3 and are operated accordingly.

9. NATIONAL ACCREDITATION

CSA International is accredited by the Standards Council of Canada (SCC) to ISO/IEC Guide 25 (CAN-P-4). The SCC certificates are shown in Annex 2.



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10.RECOGNITION AND AGREEMENTS

CSA International has an agreement with the following testing and certification bodies that is based on mutual acceptance of construction evaluation and test results:

United Kingdom	: EECS, SCS
Germany	: PTB
The Netherlands	: KEMA Quality B.V.
France	: LCIE

11.INTERNAL AUDIT AND PERIODIC REVIEW

The procedures are in DQD 050, Section 14.0 and are operated accordingly.

12.COMPLAINTS MECHANISM

The procedures are in DQD 050, Section 18.0 and in DQD 335, Section 4.3 and are operated accordingly.

13. SPECIAL FACTS TO BE NOTED

None

14. COMMENTS

None

15. RECOMMENDATION

Based on the findings from the document review, both on-site visits and the follow-up of the required corrective actions the assessment team recommends full acceptance of the candidate testing laboratory as IECEx TL for the product standards applied as shown in Item 1.6 of this report.

LIST OF ANNEXES

Annex 1: Organization diagrams

Annex 2: ISO/IEC Guide 25 certificates from the Standards Council of Canada for Toronto (Etobicoke) and Edmonton.

Annex 3: Comments from the Lead assessor Mr Bert Vries

CSA INTERNATIONAL
DIVISIONAL QUALITY DOCUMENTS

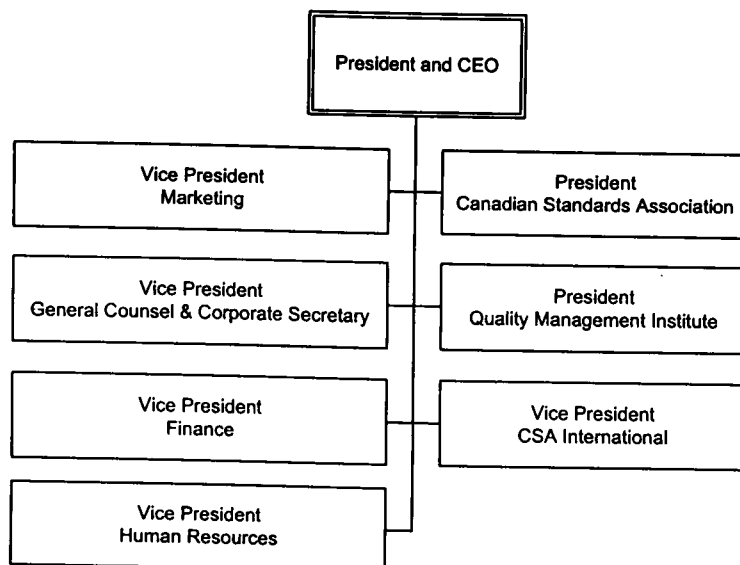
Rev. 2001-11-30

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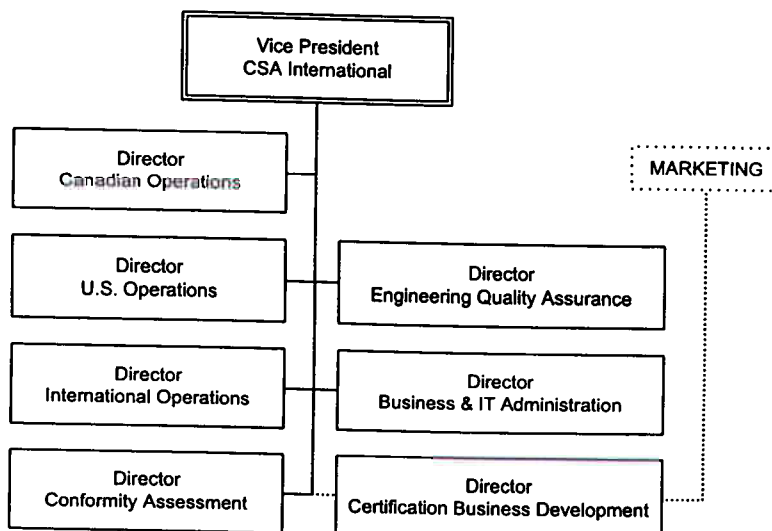
QUALITY MANAGEMENT SYSTEM MANUAL

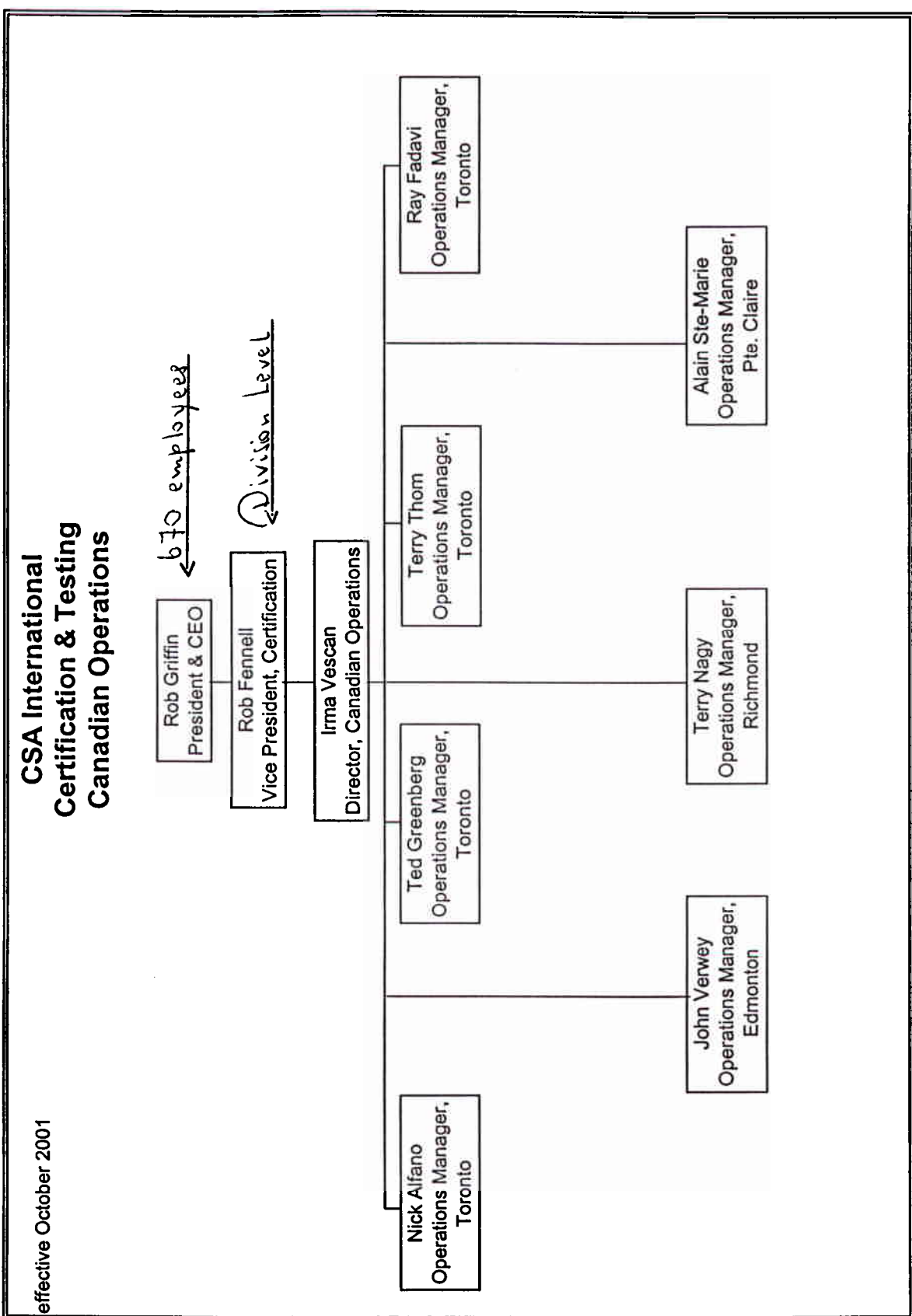
DQD NO.
050

CSA Group 1100 employees
Executive Team



CSA International 670 employees





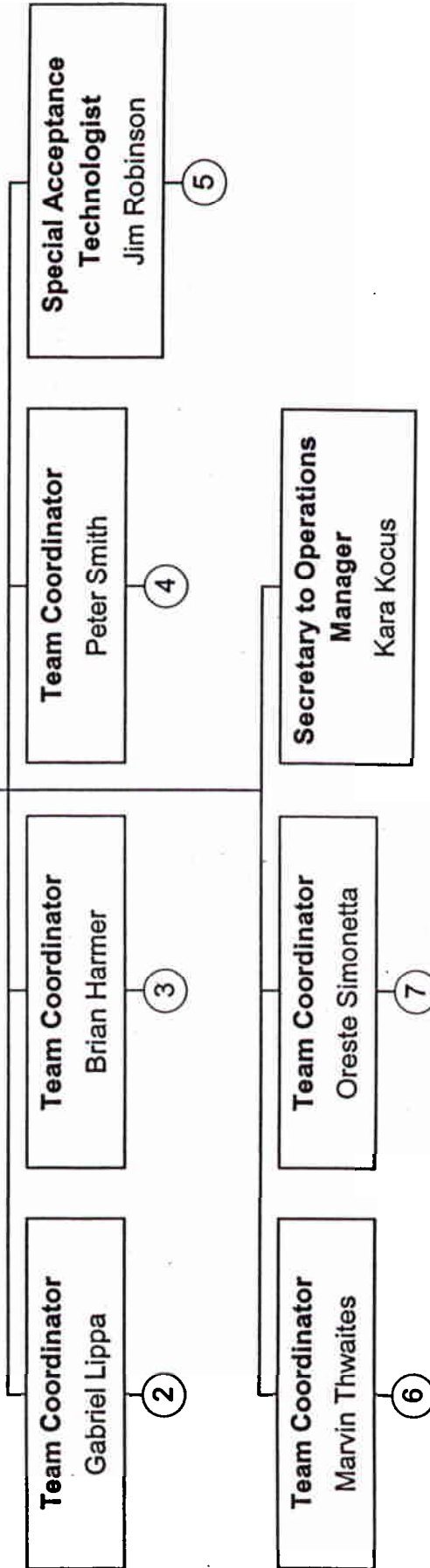
Org Chart Canada



Effective March 04, 2002

Toronto

**Operations Manager,
Elec. & Inspections**
Nick Alfano

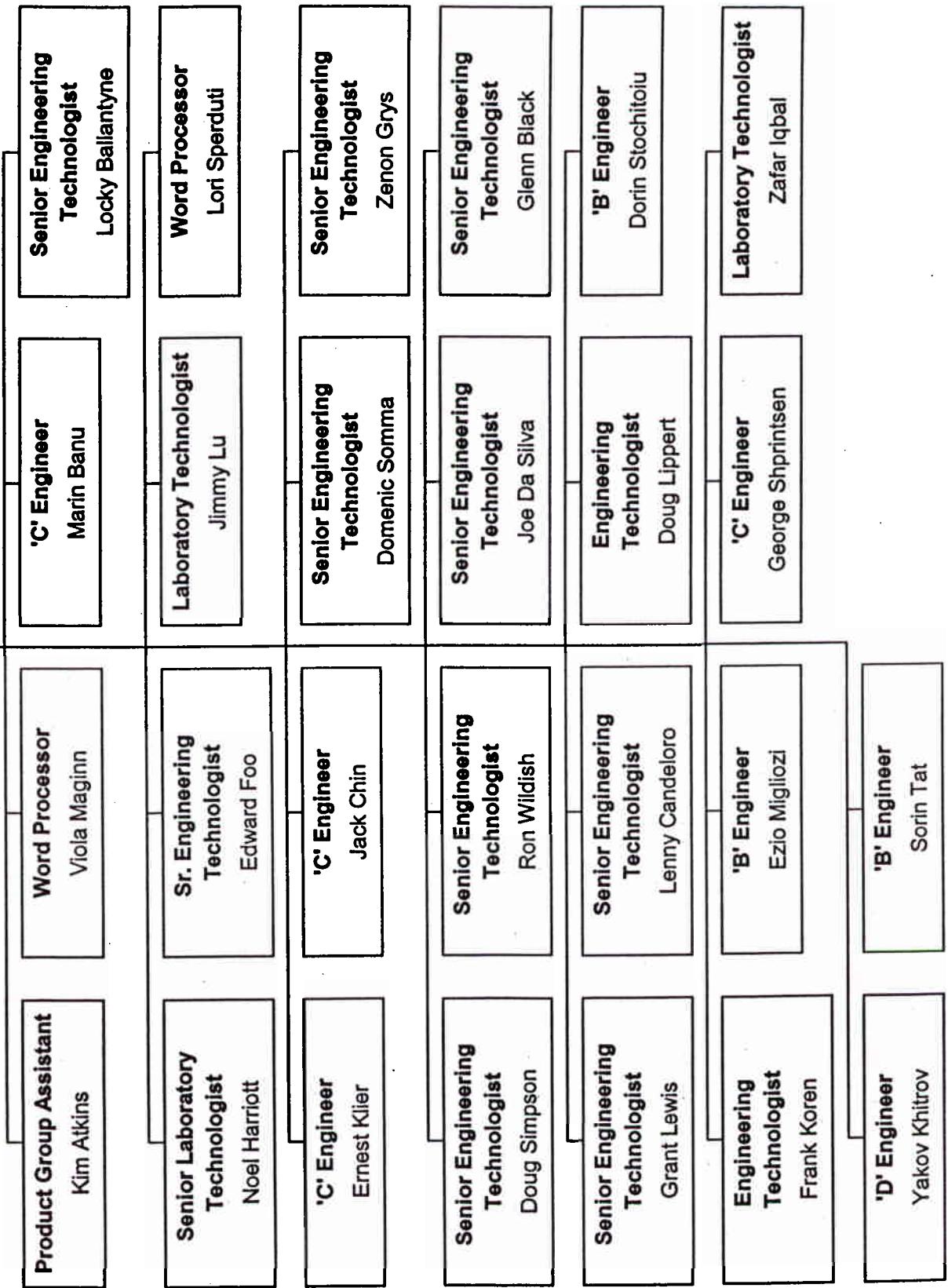




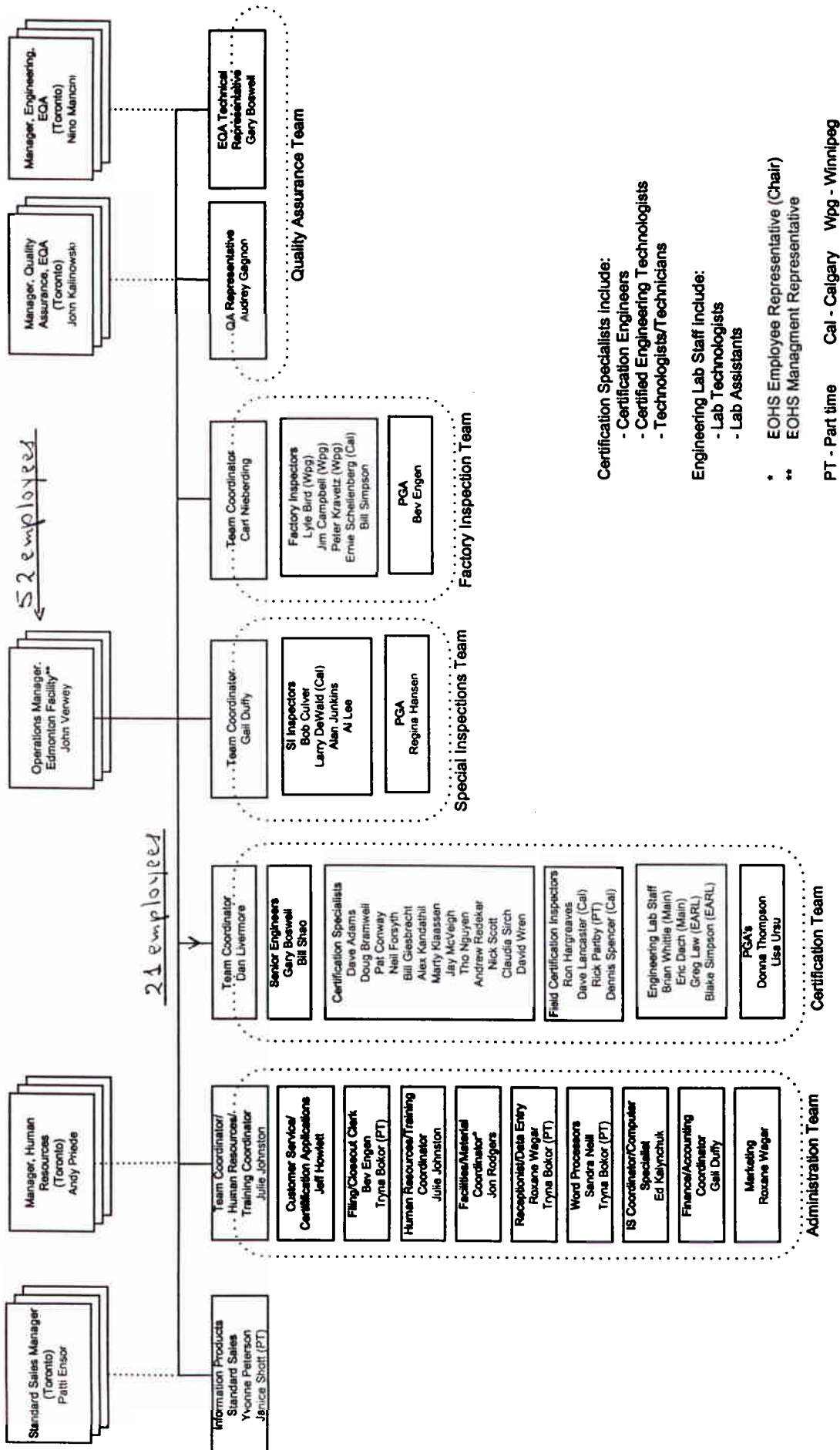
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Team Coordinator
Peter Smith

Toronto (27 employees)



CSA International Edmonton Facility Quality Management Organization Chart



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Annex 1, 5/6

CSA INTERNATIONAL
DIVISIONAL QUALITY DOCUMENTS

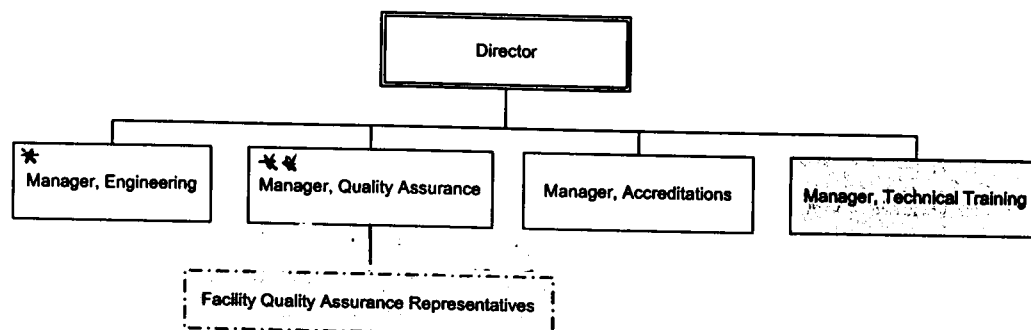
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QUALITY MANAGEMENT SYSTEM MANUAL

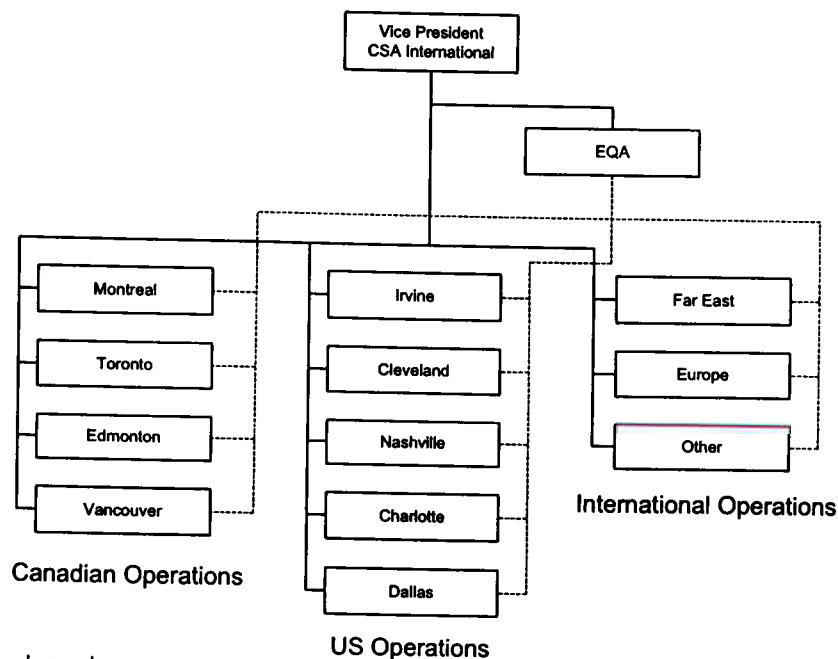
DQD NO.
050

Engineering Quality Assurance



* Nino Mancini
** John Kalinowski

CSA International
Divisional System for Quality Assurance and Engineering



Legend

----- Engineering Quality Assurance accountability
----- Direct reporting

Standards Council
of CanadaConseil canadien
des normes

Certificate of accreditation

Certificat d'accréditation

Canadian Standards Association
ELECTRICAL, MECHANICAL AND PHOTOMETRIC LABORATORIES
178 Rexdale Boulevard, Etobicoke, Ontario

having been assessed under the authority of the Standards Council of Canada Act and found to comply with the requirements of ISO/IEC Guide 25 and the conditions established by the SCC is hereby recognized as an

ayant été soumis à une évaluation selon la Loi sur le Conseil canadien des normes et ayant été trouvé conforme aux prescriptions du Guide ISO/CEI 25 et aux conditions établies par le CCN est de fait reconnu comme étant un

ACCREDITED TESTING LABORATORY

for specific tests or types of tests listed in the scope of accreditation approved by the Standards Council of Canada.

LABORATOIRE D'ESSAIS ACCRÉDITÉ

pour des essais ou types d'essais déterminés inscrits dans la portée d'accréditation approuvée par le Conseil canadien des normes.



Accredited Laboratory No.:
No de laboratoire accrédité : 12

Accreditation date:

Date d'accréditation : 1984-06-15

Issued on:

Émis ce : 2001-02-21

Expiry date:

Date d'expiration : 2004-06-15

[Signature]
Chair (SCC) / Présidente (CCN)

Assessment performed according to the General Requirements for the Accreditation of Calibration and Testing Laboratories, CAN-P-4 (ISO/IEC Guide 25) and the Conditions for the Accreditation of Calibration and Testing Laboratories, CAN-P-1516. The scope of accreditation is available from the accredited laboratory or SCC.

Évaluation effectuée conformément aux Prescriptions générales concernant la compétence des laboratoires d'étalonnage et d'essais, CAN-P-4 (Guide ISO/CEI 25) et aux Conditions d'accréditation des laboratoires d'étalonnage et d'essais, CAN-P-1516. La portée d'accréditation est disponible auprès du laboratoire accrédité ou du CCN.

This certificate is the property of the Standards Council of Canada (SCC) and must be returned on request; reproduction is prohibited except on written approval of the SCC.
Ce certificat est la propriété du Conseil canadien des normes (CCN) et doit lui être rendu sur demande; toute reproduction est interdite sans l'approbation écrite du CCN.

Canada

Standards Council
of Canada



Conseil canadien
des normes

Certificate of accreditation

Certificat d'accréditation

Canadian Standards Association

ELECTRICAL AND MECHANICAL LABORATORIES - WESTERN REGION

1707-94 Street, Edmonton, Alberta

having been assessed under the authority of the *Standards Council of Canada Act* and found to comply with the requirements of ISO/IEC Guide 25 and the conditions established by the SCC is hereby recognized as an

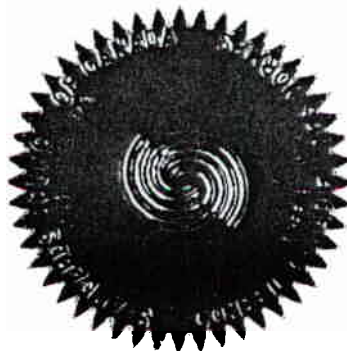
ayant été soumis à une évaluation selon la *Loi sur le Conseil canadien des normes* et ayant été trouvé conforme aux prescriptions du Guide ISO/CEI 25 et aux conditions établies par le CCN est de fait reconnu comme étant un

ACCREDITED TESTING LABORATORY

for specific tests or types of tests listed in the scope of accreditation approved by the Standards Council of Canada.

LABORATOIRE D'ESSAIS ACCRÉDITÉ

pour des essais ou types d'essais déterminés inscrits dans la portée d'accréditation approuvée par le Conseil canadien des normes.



Accredited Laboratory No.:
Numéro de laboratoire accrédité : 135

Accreditation date:
Date d'accréditation : 1993-12-07

Issued on:
Délivré le : 2001-12-13

Expiry date:

Date d'expiration : 2002-12-07

Chair (SCC) / Président (CCN)

Assessment performed according to the *General Requirements for the Accreditation of Calibration and Testing Laboratories*, CAN-P-4 (ISO/IEC Guide 25) and the conditions of the *PALCAN Handbook D92.6*. The scope of accreditation is available from the accredited laboratory or SCC. To verify the validity of the certificate, please see the listing of Accredited Laboratories on www.scc.ca.

Évaluation effectuée conformément aux *Prescriptions générales concernant la compétence des laboratoires d'étalonnage et d'essais*, CAN-P-4 (Guide ISO/CEI 25) et aux conditions du Guide *PALCAN D92.6*. La portée d'accréditation est disponible auprès du laboratoire accrédité ou du CCN. Pour vérifier la validité du présent certificat, consultez la liste des laboratoires accrédités à l'adresse www.ccn.ca.

This certificate is the property of the Standards Council of Canada (SCC) and must be returned on request; reproduction is prohibited except on written approval of the SCC.
Ce certificat est la propriété du Conseil canadien des normes (CCN) et doit lui être remis sur demande; toute reproduction est interdite sans l'autorisation écrite du CCN.

Canada



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Annex 3 Further comments from Lead assessor

Concerning the CSA reports.

1. On the first page of both reports I included that the "complete assessment team" carried out the audit during 1 day in Toronto (3 man-days) and 1 day in Edmonton (3-man-days).

2. The accreditation certificates I attached to both reports were the certificates I received at the time of the assessment. Since it was not clear from the scope how detailed Ex-equipment was assessed I decided as lead-auditor (with acceptance from Joe Gryn) that all members of the assessment team should carry out the ACB- and ExTL assessment. Since there are 2 locations the assessment took 6 man-days.

Concerning the scope of the certificates:

- I mentioned in my ExTL report that accreditation against the ISO/IEC 17025 was expected at the end of this year for both locations. The scope of this accreditation for Edmonton sent by Joe shows all relevant Ex-activities. If the scope for Toronto also shows this Ex-activities under the ISO/IEC 17025 accreditation, in my opinion only a 5-years re-assessment will be necessary for the ExTL part.

- Construction evaluation, testing and review are carried out under the ExTL accreditation. The certification manager for Toronto and Edmonton are both Operations Managers. Their certification activities fall under the scope of the ISO Guide 65 accreditation and have been checked during the initial assessment. Since 99% of the Ex-work is carried out under the ExTL accreditation, in my opinion there is no need for annual surveillance audits for the ACB part if the ISO 65 certificate does not show a detailed scope like the ISO/IEC 17025 accreditation.