

**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 Underwriters  
Laboratories Inc, USA as an Accepted Certification Body (ACB) within  
the IECEx Scheme**

---

**This document contains the IECEx Assessment Report for UL,  
incorporating minor changes to ExMC/138/R.**

**This document replaces ExMC/138/R.**

**A marginal bar such as the one shown here identifies the changes  
included in this latest version.**

**The major elements of the report detailed in ExMC/138/R remain  
unchanged including the Assessment Team's recommendation for  
acceptance of UL, as an IECEx ACB**

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

<b>Address:</b> IECEX Secretariat 286 Sussex Street Sydney NSW 2140 Australia	<b>Tel: +61 2 8206 6940</b> <b>Fax: +61 2 8206 6272</b> <b>Email: <a href="mailto:chris.agius@iecex.com">chris.agius@iecex.com</a></b>
---	--

## **IECEx ASSESSMENT REPORT FORM**

### **For ACB**

### **(Accepted Certification Body)**

#### **Type of Assessment:**

Initial Assessment for Candidate ACB ☒ X  
Surveillance Assessment for existing ACB ☐

#### **1. OBJECT AND FIELD OF APPLICATION**

##### **1.1 Country:**

USA

##### **1.2 Name of Candidate TL**

Underwriters Laboratories Inc.  
333 Pfingsten Road  
Northbrook, IL 60062-2096

##### **1.3 Members Of The Assessment Team**

M.Br��non (LCIE)	Lead Auditor
Dr Zalogine (NANIO CC VE IGD)	Auditor
M.Botiuk (ITACS)	Auditor

##### **1.4 Place And Date Of Assessment**

see 1.2, 4<sup>h</sup> and 5<sup>th</sup> of February 2002

##### **| 1.5 Assessment References**

Document:

- i) IECEx 02 First Edition 1999-10
- ii) IECEx Operational Document Ex/OD003
- iii) ISO/IEC Guide 65:1996
- iv) ACB application documents dated 17 July 2001 in covering letter

## 1.6 *Scope Of Application*

Product Category	Standard
General Requirements	IEC 60079-0
Part 1: Construction and verification test of flameproof enclosures of electrical apparatus	IEC 60079-1
Part 5: Powder filling 'q'	IEC 60079-5
Part 6: Oil-immersion 'o'	IEC 60079-6
Part 7: Increased safety 'e'	IEC 60079-7
Part 11: Intrinsic safety 'i'	IEC 60079-11
Part 15: Electrical apparatus with type of protection 'n'	IEC 60079-15
Part 18: Encapsulation 'm'	IEC 60079-18
Electrical Apparatus for the detection and measurement of flammable gases Part 1: General requirements and test methods	IEC 61779-1
Electrical Apparatus for the detection and measurement of flammable gases Part 4: Performance requirements for group II apparatus indicating up to 100% lower explosive limit	IEC 61779-4
Electrical Apparatus for the detection and measurement of flammable gases Part 5: Performance requirements for group II apparatus indicating a volume fraction up to 100% gas	IEC 61779-5

## 1.7 *Candidate ACB Persons Interviewed*

Name	Position
Jodi Smyth	Senior Coordinator, Global Accreditation Services
Ronald C. Vaickauski	Senior Staff Engineer, International Compliance Services
Kerry McManama	Associate Manager, HazLoc Conformity Assessment Services

## 1.8 *Legal Entity Of The Candidate ACB*

See 1.2

## 1.9 *Associated Testing Laboratories*

Names of Laboratories	Address
See 1.2	

## 1.10 *Associated Certification Functions*

No

### 1.11 *National Marks And Certificates*

Yes, UL mark

### 1.12 *Financial Support*

UL declares it is self supporting through the fees coming from its customers.

### 1.13 *History*

UL was founded in 1894 by William Henry Merrill. UL both developed standards for product safety in the US, along with certification of products to those requirements. As early as 1897 UL published lists of approved fittings and electrical devices based upon the test methods and product standards Merrill had developed. Through the years UL has grown with test facilities in New York, California, North Carolina and Washington states in the US, and affiliate locations in Europe, Asia, Canada and South America in addition to hundreds of local inspection centers worldwide to support the UL product certification program. Throughout UL's history, UL has continued to develop expertise in a wide range of product areas from electrical, to fire, to gas and oil equipment. Today UL evaluates 18,500 different types of products to hundreds of different conformity assessment standards.

### 1.14 *Standards Accepted*

IEC Number	Title	Edition	Amdt
<i>Electrical apparatus for explosive gas atmospheres:</i>			
60079-0	Part 0: General Requirements	3 <sup>rd</sup> 1998	A1:2000
60079-1	Part 1: Construction and verification test of flameproof enclosures of electrical apparatus	3 <sup>rd</sup> 1990	A1:1993 A2:1998
60079-5	Part 5: Powder filling 'q'	2 <sup>nd</sup> 1997	-
60079-6	Part 6: Oil-immersion 'o'	2 <sup>nd</sup> 1995	-
60079-7	Part 7: Increased safety 'e'	2 <sup>nd</sup> 1990	A1:1991 A2:1993
60079-11	Part 11: Intrinsic safety 'i'	4 <sup>th</sup> 1999	-
60079-15	Part 15: Electrical apparatus with type of protection 'n'	1 <sup>st</sup> 1987	-
60079-18	Part 18: Encapsulation 'm'	1 <sup>st</sup> 1992	-

#### *Electrical apparatus for the detection and measurement of flammable gases:*

61779-1	Part 1: General requirements and test methods	1 <sup>st</sup> 1998	-
61779-4	Part 4: Performance requirements for group II apparatus indicating up to 100% lower explosive limit	1 <sup>st</sup> 1998	-
61779-5	Part 5: Performance requirements for group II apparatus indicating a volume fraction up to 100% gas	1 <sup>st</sup> 1998	-

### 1.15 *National Differences To IEC Standards*

These have been provided to the IECEx Secretariat.

## 2. ORGANISATION

### 2.1 *Names, Titles And Experience Of The Senior Executives*

Name	Title	Experience
JERRY KOPSTEIN	Department Manager	29 years at UL

### 2.2 *Name, Title And Experience of The Quality Management Representative*

Name	Title	Experience
RONALD CZISCHKE	Certified Quality Engineer	15 years, Engineering 10 years, Quality

### 2.3 *Name And Title of Nominated Principal Contact*

Name	Title	Comments
Kerry McManama	Associate Manager, HazLoc Conformity Assessment Services	

### 2.4 *Name and Title of Signatories for Certification*

Name	Title	Comments
KERRY MCMANAMA	Associate Manager	10 years, UL 11 years, industry

### 2.5 *Other Employees in ACB activity*

Name	Title	Responsibility
Katy Holdredge	Engineering Group Leader	Evaluation
David Malohn	Engineering Team Leader	Evaluation
Benjamin Schaefer	Engineering Group Leader	Evaluation
Michael Slowinske	Engineering Group Leader	Evaluation

### 2.6 *Organisational Structure*

See attached organization charts in Annexes 1 and 2.

## **2.7 Administration**

### **2.7.1 Administrative Structure**

See attached organization charts in Annexes 1 and 2.

### **2.7.2 Terms of Reference of the Governing Board**

UL operates under a Board of Directors.

## **3. RESOURCES**

ACB has all necessary resources for its operation in-house, including personnel trained and experienced in factory inspection / quality audits.

## **4. COMMITTEES**

IECEx MC:	K. McManama, Lead US delegate, Voting member
IECEx TAG:	K. McManama, Lead US delegate, Voting member
USNC/IECEx:	K. McManama, Chairman, Voting member
USNC Council:	K. McManama, Liason-non-voting member from USNC/IECEx
USNC TMC:	K. McManama, Liason-non-voting member from USNC/IECEx
IEC/TC31:	K. McManama, USNC/USTAG member
IEC/TC31:	K. McManama, WG13 technical expert (Increased safety)
IEC/TC31:	M. Slowinske, MT16 technical expert (General)
IEC/TC31:	K. McManama, MT17 technical expert (Encapsulation)
IEC/TC31G:	B. Schaefer, MT4 technical expert (Intrinsic safety)
IEC/SC31H:	K. McManama, Secretary
IEC/SC31H:	K. McManama, WG3 technical expert (Dust)

## **5. CERTIFICATION OPERATIONS**

### **5.1 National Approval/Certification Methods**

National accreditation by American National Standards Institute (ANSI), Standards Council of Canada (SCC) and U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)

.

### **5.2 Certification Policy**

Policy is to grant certification of electrical equipment for use in hazardous locations based on testing to establish conformity to recognized standards and ensure that production quality is controlled. The service is accessible to all prospective customers.

### **5.3    *Staff Work Instructions***

Instructions are embodied in the IECEx Scheme Manual.

### **5.4    *Application for Certification***

Provided to ExMC Secretary

## **6.    STATISTICS**

Certificates issued during the past 2 years:

<b>Standard</b>	<b>Projects in 2000</b>	<b>Projects in 2001</b>
EN 50014 / IEC 60079-0 <i>General Requirements</i>	72	91
EN 50015 / IEC 60079-6 <i>Oil Immersion</i>	0	0
EN 50017 / IEC 60079-5 <i>Powder Filling</i>	0	0
EN 50018 / IEC 60079-1 <i>Flameproof Enclosure</i>	24	23
EN 50019 / IEC 60079-7 <i>Increased Safety</i>	22	24
EN 50020 / IEC 60079-11 <i>Intrinsic Safety</i>	23	42
EN 50021 / IEC 60079-15 <i>Non-Incendive (Zone 2)</i>	9	8
EN 50028 / IEC 60079-18 <i>Encapsulation</i>	3	2
IEC 61779-1, -4, -5* <i>Gas Detectors</i>	1	2
<b>In Total</b>	<b>82</b>	<b>101</b>

\*Evaluated to CSA C22.2 No. 152, Combustible Gas Detection Instruments; Environmental Products General Instruction No 1-3; Second Edition R(1997))

## **7.    DOCUMENTATION**

### **7.1    *Document and Change Control***

The procedures and policies satisfy ISO Guide 65 clause 4.8 requirement and specially clause 4.8.2 via GCPC 4.82, CAM 1.2, CAM 15, DOO1 (UL-NBK IECEx Scheme Manual).

## **8.    RECORDS**

The procedures satisfy ISO 65 clause 4.9 requirements via ASP 210.

## **9. CONFIDENTIALLY**

The procedures satisfy ISO 65 clause 4.10 requirements.

## **10. PUBLICATIONS**

UL's website: [www.ul.com/hazloc/](http://www.ul.com/hazloc/)

UL Product Directories including the Hazardous Locations Equipment Directory

UL's Hazardous Locations Services Poster

"Code Authority"

"On the Mark"

## **11. APPEALS**

The procedures satisfy ISO 65 clause 7 requirements via Appeal Process rev 06/01.

## **12. NATIONAL ACCREDITATION**

UL Northbrook (USA) has three accreditations (see application) covering for most of its certification activities. These accreditations are not specific to the Hazloc Activities, although encompassing the m.

- a) Third party Accreditation by Standards Council of Canada has been checked and found useful in view of the recognition as ACB.
- b) Although not fully meeting the needs of the IECEX02, the third party accreditation by ANSI is based on ISO 65 and in this respect has been found useful in view of the recognition as ACB.
- c) The OSHA, second party, accreditation has been considered, although not founded on ISO 65 but on a proprietary reference document.

All the relevant parts of these different accreditations have been taken into account during the assessment against ISO 65.



### **13. RECOGNITION AND AGREEMENTS**

1. Physikalisch - Technische Bundesanstalt (PTB)
2. Laboratoire Central des Industries Electriques (LCIE)
3. KEMA Registered Quality Nederland B.V.
4. Deutsche Montan Technologie GmbH (DMT) - Pending final signature
5. Sira Certification Service - Pending final signature
6. Technology Institution of Industrial Safety (TIIS) - Pending final signature

### **14. QUALITY MANUAL**

General to UL activities completed by few documents specific to IECEx operations  
eg : D001 ,D002, D003.

### **15. INTERNAL AUDIT AND PERIODIC REVIEW**

ISO65 clause 4.5.2 f) and clause 4.7 have not yet the corresponding procedures established, although it important to note that a dedicated person for this task has been designated.

### **16. COMPLAINTS**

see 11

### **17. WITHDRAWAL AND CANCELLATION OF CERTIFICATES**

IECEx Scheme Manual specifies procedure to be followed.

### **18. SPECIAL FACTS TO BE NOTED**

As part of the assessment, the team reviewed the regulatory framework within UL operates at national level. The assessment team concluded that UL would need to participate at the transitional level. It has been, also, noted by the assessment team that the list of test standards recognized by OSHA, at federal level, does not include standards recognised in NEC 2002 under article 505 such as ANSI/UL 2279, part XX. In other terms, Class I, zone 0, 1 and 2 protection methods are not recognised by OSHA. It has been noted that other jurisdictions, may, to some extent recognised these standards. The assessment team also concluded that the issue of the market access concerning all participating countries should be discussed at the upcoming IECEx Management Committee Meeting, in Seoul.

## **19. RECOMMENDATION**

**1) The assessment team recommends full acceptance of UL Northbrook IECEx Certification organisation for :**

**IEC 60079-0, IEC 60079-1 (d), IEC 60079-11 (i), IEC 60079-15 (n) and after careful consideration full acceptance for IEC60079-6 (o), IEC60079-5(q), 60079-18 (m).**

**2) The assessment teams recommend acceptance of UL Northbrook Certification, taking into account document Q attached, on the condition that 6 other reports issued, within one year, for IEC 61779-1,-4,-5 are satisfactorily examined.**

**M.Brénon (LCIE)**

**Lead Auditor**

**Dr Zalogine (NANIO CC VE IGD) Auditor**

**M.Botiuk (ITACS)**

**Auditor**

## **LIST OF ANNEXES**

Annex 1 - Management Reporting Structure Northbrook Office

Annex 2 - IECEx Scheme Organization Chart

Annex 3 – Accreditations

Fax from :

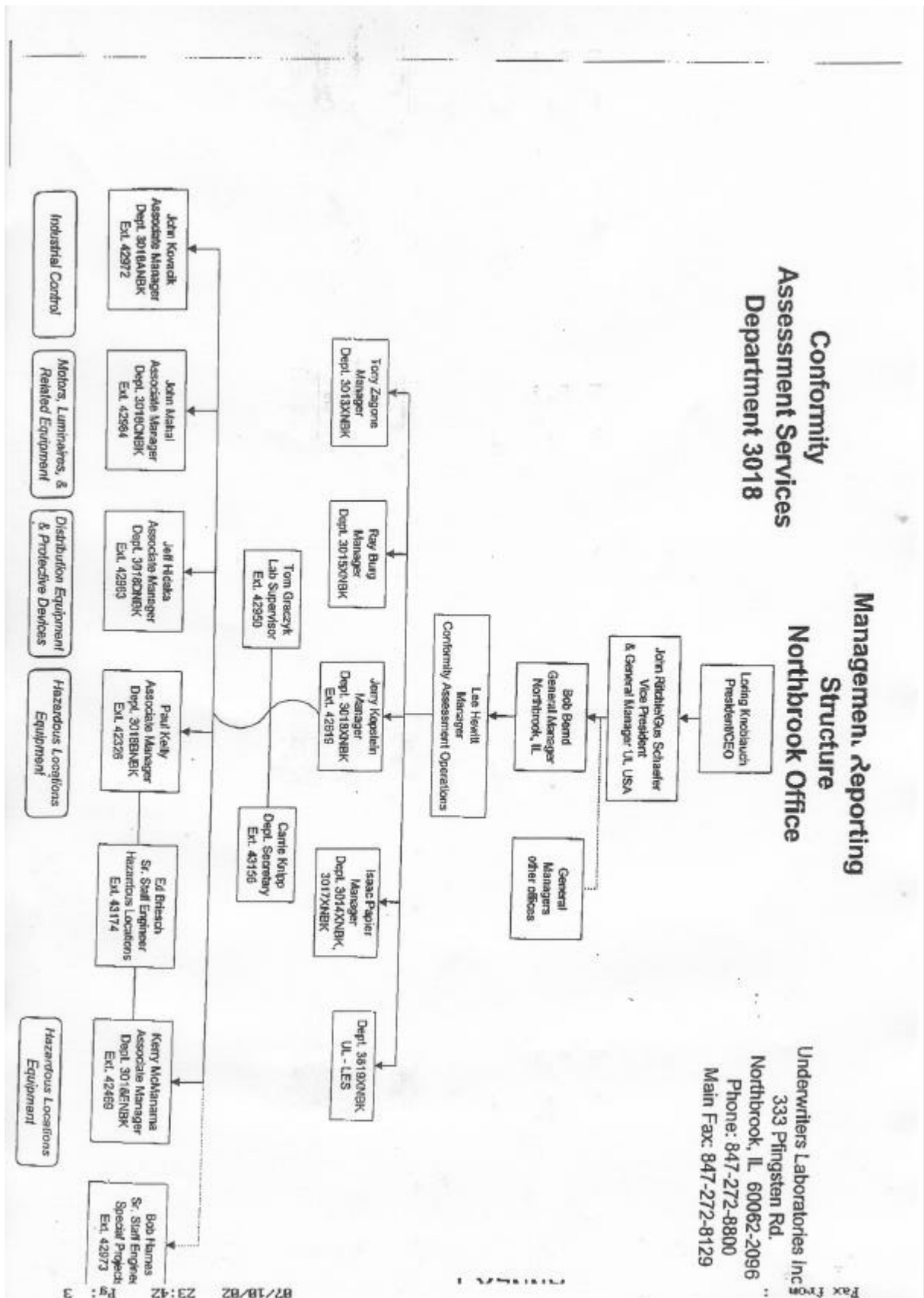
07/10/02 23:42 Pg: 2

UL - ACB - IECEx - ASSESSMENT - REPORT

## Annex 1

Management Reporting Structure North Brook Office

4/5 Feb 02



Fax from :

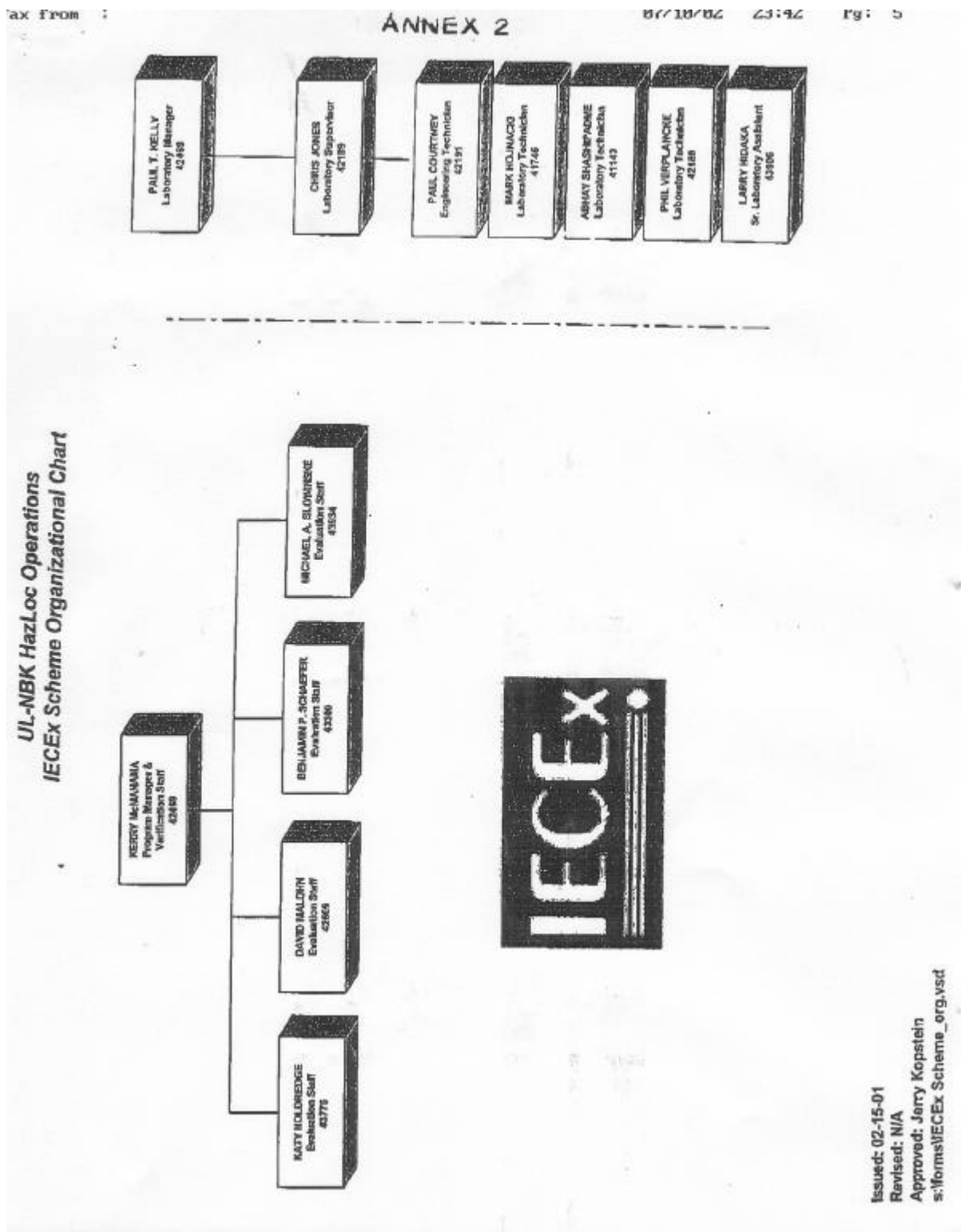
87/18/02 23:42 Pg: 4

UL - ACB - IECEx - ASSESSMENT - REPORT

## Annex 2

### IECEx – Scheme Organisation Chart

4/5 Feb 02



Fax from :

87/18/82 23:42 Pg: 6

UL - ACB - IECEx - ASSESSMENT - REPORT

## **Annex 3**

### **Accreditations**

4/5 Feb 02

Fax from :



American National Standards Institute

87/18/82 23:42 Pg: 7  
ATTACHMENT 2

September 5, 2000

Mr. Rick Titus  
Corporate Coordinator  
Accreditation Services  
External Affairs Division  
Underwriters Laboratories, Inc  
333 Pfingsten Road  
Northbrook, IL 60062-2096

Dear Mr. Titus:

This letter is confirmation that the attached list of Underwriters Laboratories Inc.'s certification programs and their sites are accredited by the American National Standards Institute:

Accreditation of third party certification by ANSI is in accordance with ISO/IEC Guide 65 - General Requirements for Bodies Operating Product Certification Systems.

Should you have any questions or if I can be of further assistance please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink that reads "Richard D. James".

Richard D. James  
Director, Conformity Assessment

L:\cc60\Private\RICK\ACPC\Companion\Accredited Organizations\UL\September 1 UL Titus letter.rtf  
1 of 4

> Headquarters 1819 L Street, NW, Washington D.C. 20036 • Tel: 202.293.8020 Fax: 202.293.9287  
New York Office 11 West 42nd Street, New York, NY 10036 • Tel: 212.642.4900 Fax: 212.398.0023  
www.ansi.org



Fax from :

07/10/02 23:42 Pg: 8

Underwriters Laboratories, Inc.  
Corporate Headquarters  
333 Pfingsten Road  
Northbrook, IL 60062  
Telephone: 847-272-8800  
Fax: 847-509-6214  
Contact: Rick Titus - [titusr@ul.com](mailto:titusr@ul.com)

Underwriters Laboratories, Inc.  
1655 Scott Boulevard  
Santa Clara, CA 95050-4169  
Tel: 408-985-2400  
Fax: 408-296-3256

Underwriters Laboratories, Inc.  
2600 N.W. Lake Road  
Camas, WA 98607-9526  
Tel: 360-817-5500  
Fax: 360-817-6000

Demko  
Lyskaer 8, P.O. Box 514  
DK-2730, Herlev, Denmark  
Tel: 45 44 85 65 65  
Fax: 45 44 85 65 00

Underwriters Laboratories, Inc.  
1285 Walt Whitman Road  
Melville, NY 11747-3081  
Tel: 516-271-6200  
Fax: 516-271-8259

UL International (UK) Ltd.  
2 Station View  
Guildford, Surrey, GU1 4JY, UK  
Tel: 044-1483-302-130  
Fax: 044-1483-302-230

Underwriters Laboratories, Inc.  
12 Laboratory Drive  
Research Triangle Park, NC 27709-3995  
Tel: 919-549-1400  
Fax: 919-549-1842

UL International Ltd.  
Block B, 17/F  
Veristrong Industrial Centre  
34 Au Pui Wan Street  
Fo Tan, Shatin  
New Territories, Hong Kong  
Tel: 852-2695-9599  
Fax: 852-2695-8196

Fax from :

07/10/02 23:42 Pg: 18

## Telecommunications

**Underwriters Laboratories, Inc.**  
Corporate Headquarters  
333 Pfingsten Road  
Northbrook, IL 60062  
Telephone: 847-272-8800  
Fax: 847-509-6214  
Contact: Rick Titus - titusr@ul.com

### Scope of Accreditation

- Unlicensed Radio Frequency Devices  
A1, A2, A3, A4.
- Licensed Radio Service Equipment  
B1, B2, B3, B4.
- Telephone Terminal Equipment

**Underwriters Laboratories, Inc.**  
1285 Walt Whitman Road  
Melville, NY 11747-3081  
Telephone: 516-271-6200

### Scope of Accreditation

- Unlicensed Radio Frequency Devices  
A1, A2, A3, A4.
- Licensed Radio Service Equipment  
B1, B2, B3, B4.
- Telephone Terminal Equipment

**Underwriters Laboratories, Inc.**  
12 Laboratory Drive  
Research Triangle Park, NC 27709-3995  
Telephone: 516-271-6200

### Scope of Accreditation

- Unlicensed Radio Frequency Devices  
A1, A2, A3, A4.
- Licensed Radio Service Equipment  
B1, B2, B3, B4.

**Underwriters Laboratories, Inc.**  
1655 Scott Blvd.  
Santa Clara, CA 98607-8542  
Telephone: 408 985-2400

### Scope of Accreditation

- Unlicensed Radio Frequency Devices  
A1, A2, A3, A4.
- Telephone Terminal Equipment

**Underwriters Laboratories, Inc.**  
2600 N.W. Lake Road.  
Camas, WA 98607-8542  
Telephone: 360-817-5605

### Scope of Accreditation

- Unlicensed Radio Frequency Devices  
A1, A2, A3, A4.

## Certification Scheme:

- A The requirements for TCBs are specified in the Commission's Report and Order (R&O) in GEN Docket 98-68 (FCC 98-338), adopted on December 17, 1998, [http://www.fcc.gov/Engineering\\_Technology/Orders/1998/fcc98338.pdf](http://www.fcc.gov/Engineering_Technology/Orders/1998/fcc98338.pdf).
- B Public Notice - FCC Provides Further Information on the Accreditation Requirements for Telecommunication Certification Bodies - GEN Docket 98-68.

Fax from :

87/18/82 23:42 Pg: 9

UL International Services Ltd.  
4th Floor  
No. 260 Da-Yeh Road  
Pei Tou, Taipei, Taiwan 112  
Tel: 886-2-2896-7790  
Fax: 886-2-2891-7644

## Scope of Accreditation

1. Automotive Equipment
2. Burglary Protection Equipment
3. Fire Protection Equipment
4. Fire Resistance Construction
5. Burning Characteristics of Building Materials and Furnishings
6. Fuel Burning Equipment
7. Fuel Handling Equipment
8. Hazardous Location Equipment
9. Liquids and Materials Classified as Fire Hazard
10. Mechanical Equipment
11. Ventilating and Conditioning Equipment for Buildings
12. Ventilating Equipment for Products of Combustion
13. Marine Products
14. Electrical and Electronic Products, Processes, Systems, and Services
15. Health Care and Health Hazard Technologies
16. Plumbing, Sewage Handling, and Piping Products  
Water Quality
17. Plumbing, Sewage Handling, and Piping Products  
Water Quality Products
  - Drinking Water Additives -
  - Drinking Water Treatment Units - Health and Aesthetic Effects
  - Drinking Water System Units and Related Components and Materials
18. Recreational and Occupational Health and Safety
19. Personal Protective Clothing
20. Grading Western Red Cedar Shingles and Shakes
21. Sanitation Products

## Certification Scheme:

Type 5