



ExMC/164/R
August 2003

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 KGS as an
Accepted Ex Testing Laboratory (ExTL) within the IECEx Scheme**

Introduction

This document contains the IECEx Assessment Report for KGS, Republic of Korea.

Following assessment, including an on-site assessment, the Assessment Team recommends acceptance of KGS as an Accepted Ex Testing Laboratory (ExTL) within the IECEx Scheme.

This report has been issued for consideration during the next ExMC Meeting being held in Budapest October 2003.

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IECEX ASSESSMENT REPORT FOR KGS (TEST LABORATORY – ExTL)

Type of Assessment:

Initial Assessment for Candidate ExTL
Surveillance Assessment for existing ExTL

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1. OBJECTS AND FIELD OF APPLICATION

1.1 *Country:* Korea

1.2 *Name of Candidate ACB*

Institute of Gas Safety Technology
Korea Gas Safety Corporation (KGS)

1.3 *Members of the Assessment Team*

Jim Munro (Team Leader)
Chris Agius
Ron Webb

1.4 *Place and Date of Assessment*

KGS
332-1 Daeya Dong, Shiyhung-Shi
Gyongai-Do--Gyeonggi-Do
KOREA 429-712

16-17 October 2002

1.5 *Assessment References*

Document:

- i) IECEx 02 First Edition 1995-03
- ii) IECEx Operational Document OD/003
- iii) ISO/IEC Guide 25: 1990 or ISO 17025
- iv) IECEx Technical Guidance Documents
- iv) ExTL application documents



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1.6 Scope of Application

| Product Category | Standard |
|----------------------------|-----------------|
| General Requirements | IEC 60079-0 |
| Flameproof Enclosures 'd' | IEC 60079-1 |
| Pressurised Enclosures 'p' | IEC 60079-2 |
| Increased Safety 'e' | IEC 60079-7 |
| Intrinsic Safety 'i' | IEC 60079-11 |

(List all Standards within scope of application or acceptance within IECEx)

For Group II only.

1.7 Candidate TL Persons Interviewed

| Name | Position |
|-----------------|---|
| Boo-Seok Oh | Executive Director, Institute of Gas Safety |
| Yeon-Hack Chung | Deputy General Manager, Apparatus Certification Team |
| Chang-Woo Lee | Engineer Electrical Testing |
| Sang-Min Kim | Assistant Manager, International Relations Department |

1.8 Legal Entity of the Candidate TL

KGS is a public body established under Article 28 of the High Pressure Gas Safety Control Law.

1.9 Associated ACB

The KGS ExTL is integral with the ACB.

1.10 Financial Support

Self-funding

1.11 History

Initially established in 1974, with the name of KGS being used since 1979. In 1995 the Institute of Gas Safety Technology was established as an annex research centre. In 1998 it became an affiliate of the Ministry of Commerce, Industry and Energy, and was designated as certification body for electrical explosion-proof performance.



1.12 Relevant Standards

| | |
|----------|--|
| 60079-0 | Electrical apparatus for explosive gas atmospheres Part 0: General Requirements |
| 60079-1 | Electrical apparatus for explosive gas atmospheres Part 1: Flameproof Enclosures 'd' |
| 60079-2 | Electrical apparatus for explosive gas atmospheres Part 2: Pressurised Enclosures 'p' |
| 60079-7 | Electrical apparatus for explosive gas atmospheres Part 7: Increased safety 'e' |
| 60079-11 | Electrical apparatus for explosive gas atmospheres Part 11: Intrinsic safety 'i' |

2. ORGANISATION

2.1 Names, Titles and Experience of the Senior Executives

| | |
|-----------------|--|
| Hong-Keun Oh | President and CEO |
| Boo-Seok Oh | Executive Director, Institute of Gas Safety Technology |
| Jin Jun Kim | General Manager |
| Yeon-Hack Chung | Deputy General Manager, Apparatus Certification Team |

2.2 Name, Title and Experience of the Quality Management Representative

| | |
|-----------------|---|
| Yeon-Hack Chung | Deputy General Manager, Over 5 years of test management Apparatus Certification Team |
|-----------------|---|

2.3 Name and Title of Nominated Principal Contact

| | |
|-------------|-----------------|
| Jin Jun Kim | General Manager |
|-------------|-----------------|

2.4 Employees

Changwoo Lee
Yeunhee Choi
Jinsu Lee
Dai-Sik Moon
Soo Dong Lim

2.5 Organisational Structure

The ACB and TL come within the apparatus certification team. This is in turn is part of the Product Certification Division--Gas Appliance Division with the Institute of Gas Safety Technology. The Executive Director of the Institute of Gas Safety Technology reports to the President and CEO



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3. RESOURCES

KGS was judged as having the necessary resources. Some improvements to testing facilities were made after the assessment. Refer to site assessment report Annex C ExMC/163/R.

4. TEST METHODS

4.1 Procedures

KGS has a comprehensive list of procedures listed in M-1000-e Explosion Proof Certification Testing Manual

4.2 Staff Work Instructions

The above manual is supported by detailed work instructions on testing and assessment.

5. TEST REPORTS AND RECORDS

5.1 Test Reports Issued

Test reports are typed and placed on file but are not issued to the customer.

For certificates, approximately 501 were issued in 2000 and 562 in 2001. These numbers include certificates that did not proceed. Detailed breakdown is shown in ACB report. Many of the certificates were based in overseas reports or certificates.

5.2 Test Records

All test records are kept on file.

6. CALIBRATION

Pressure and distances measuring devices are calibrated at KGS. This is accredited by KOLAS certificate KC01-007. All other equipment is calibrated externally, generally by Korean Testing Laboratory (KTL) at twelve month intervals. Korea Research Institute of Standards and Science (KRISS) accredit KTL.



7. DOCUMENTATION

7.1 *Quality Manual*

The quality manual includes procedures for testing to relevant Ex requirements. Subsequent to the assessment, procedures for Ex 'i' requirements were also developed.

7.2 *Document Change Control*

KGS operates a manual document change control system.

8. CONFIDENTIALLY

All staff sign confidentiality agreements.

9. NATIONAL ACCREDITATION

At the time of assessment KGS did not hold any national accreditation as a testing body for Ex testing. However, they have since advised that Ex tests and other tests are now accredited by KOLAS (Korea Laboratory Accreditation Scheme).

10. RECOGNITION AND AGREEMENTS

KGS is designated by the Ministry of Commerce, Industry and Energy as certification body for electrical explosion-proof performance.

11. INTERNAL AUDIT AND PERIODIC REVIEW

Internal audits were fully covered by ACB-A-2000. Records of Internal audits and corrective actions were confirmed, including documented records,

Management reviews are by ACB-A-1000. It was noted that a management review meeting was held on in September 2002. A report of this meeting was sighted.

12. COMPLAINTS MECHANISM

ACB-A-5000 "Complaints and Appeals Handling Procedure" details how complaints should be made together with form B5000-1 which is to be completed concerning complaints and appeals.

At the time of the assessment no complaints had been received in the Ex department.



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13. SPECIAL FACTS TO BE NOTED

Several matters requiring corrective action were identified during the audit. As part of the recommended actions, KGS was asked to prepare samples of ATRs for three techniques.

KGS subsequently made an excellent effort to address these corrective actions. However, some issues were found with the preparation of the sample ATRs, mainly in relation to their understanding of how the ATRs should be completed. Feedback has been given on these issues.

As part of the assessment IECEx Technical Guidance Documents were successfully completed and have been forwarded to the IECEx Secretary for retention on file.

14. COMMENTS

None.

15. RECOMMENDATION

That acceptance is granted, conditional on agreement that a follow up visit be made by a member of the assessment team within the next six months.

LIST OF ANNEXES

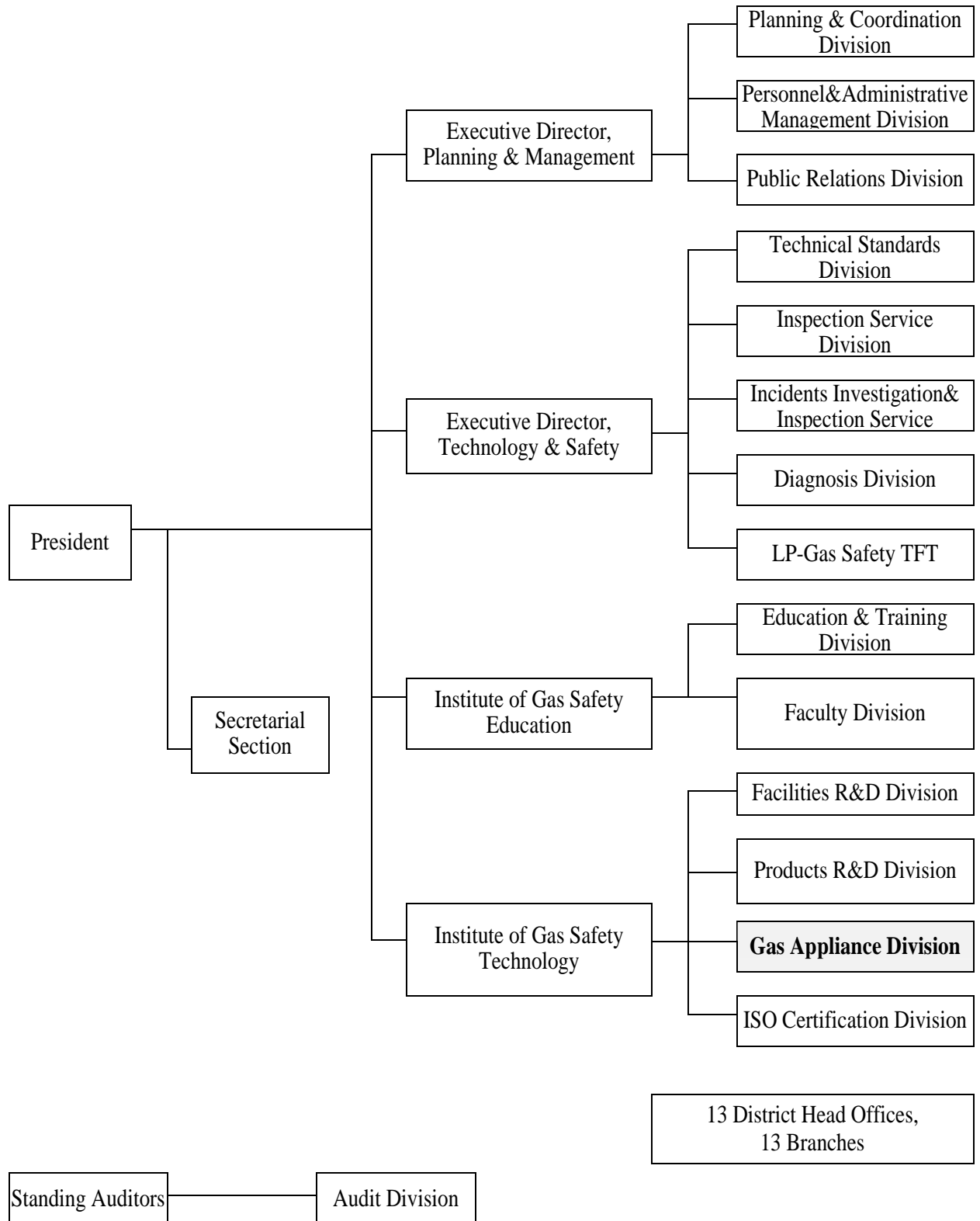
A. Organisational Chart for KGS

B. Organisation of Examination Inspection Division



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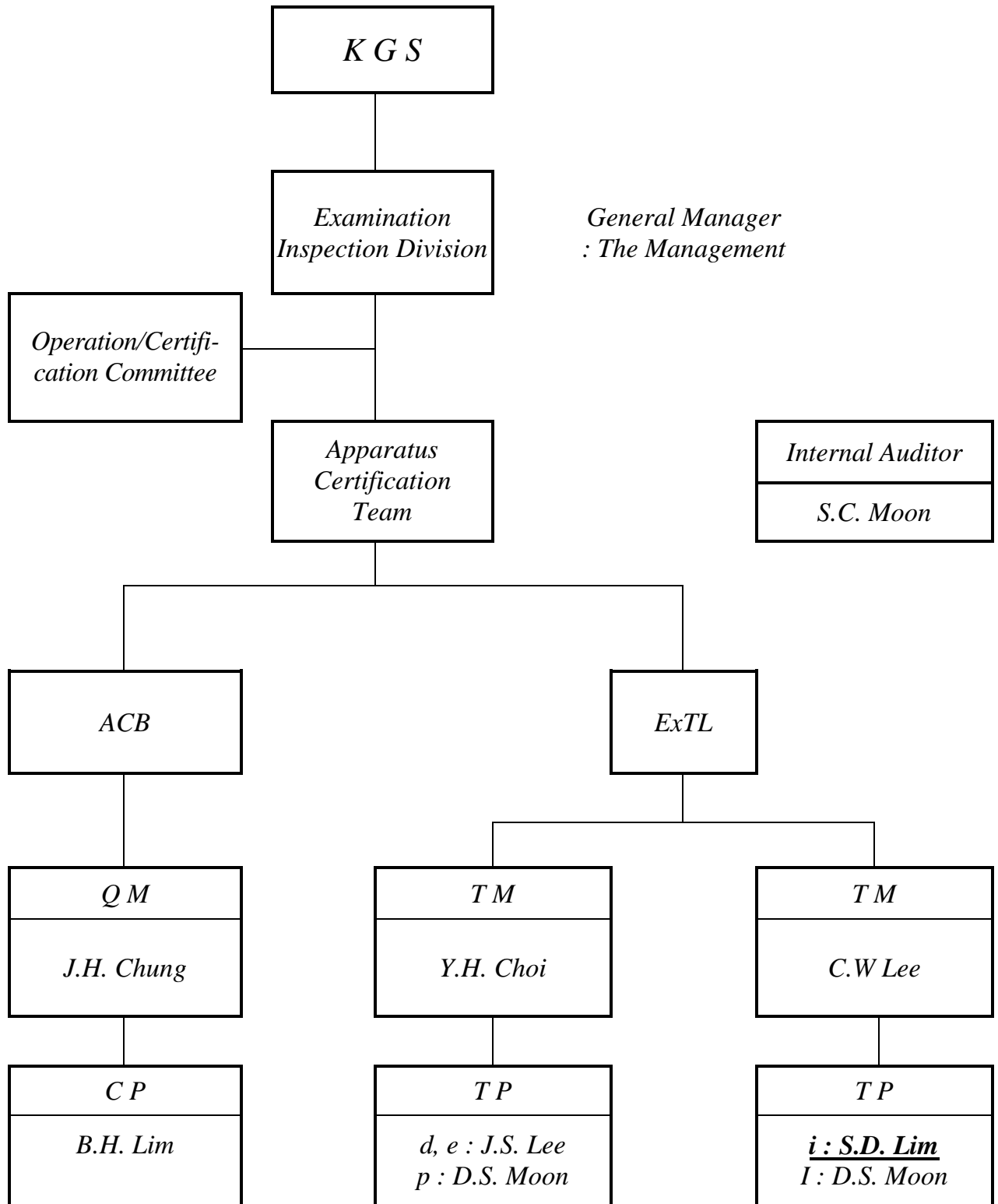
Annex A Organisational Chart for KGS





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Annex B Organisation of Examination Inspection Division



* S.D. LIM has worked Feb. 17, 2003.