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

Title: Re-assessment Report for the continued acceptance of Korea Gas Safety Corporation (KGS), Korea as an Ex Certification Body (ExCB) within the IECEx System

To: Members of the IECEx Management Committee, ExMC

Introduction

This document contains the IECEx Re-assessment Report for Korea Gas Safety Corporation (KGS), Korea, as an Accepted Certification Body ExCB in accordance with the 5-year re-assessment plan for the surveillance and monitoring of bodies under the IECEx System.

This Report is issued for information and noting during the next IECEx Meeting.

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IECEx RE-ASSESSMENT REPORT FOR KGS

ExCB
(IECEx Certification Body)

Type of Assessment: (please mark)

Re-Assessment of ExCB X

Scope Extension of ExCB X

1. OBJECT AND FIELD OF APPLICATION

1.1. Country:
Republic of Korea

1.2. Name of Candidate ExCB
Institute of Gas Safety Technology
Korea Gas Safety Corporation (KGS)

1.3. Members of the Assessment Team
Jim Munro, Chairman Panel of Assessors - Lead Assessor
Ron Webb, FM Approvals Ltd – Expert assessor

1.4. Place and Date of Assessment
KGS
332-1 Daeya Dong, Shiyhung-Shi
Gyonggi-Do
KOREA 429-712

3-4 December 2007 (4 man-days)

1.5. Assessment References

i) IECEx 02 Third Edition 2006-11 IECEx Scheme rules of procedure
ii) IECEx OD 003/V1 IECEx Assessment procedures
iii) IECEx OD 005V2 Quality System requirements for manufacturers
iv) IECEx OD 009/V1 Issuing of CoCs, ExTRs and QARs
v) IECEx OD 025/V1 Management of assessment and surveillance programs for manufacturers (includes QAR forms)
vi) ISO/IEC Guide 65:1996
vii) IECEx Document OD 017/V3 Drawing and documentation guidance

1.6. *Scope of Application (to be selected)*

Number	Title
60079-0	Electrical apparatus for explosive gas atmospheres Part 0: Equipment - General requirements
60079-1	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures 'd' **EDITION 6**
60079-2	Electrical apparatus for explosive gas atmospheres - Part 2: Electrical apparatus type of protection 'p' pressurization
60079-7	Explosive atmospheres - Part 7: Equipment protection by increased safety 'e' **EDITION 4**
60079-11	Electrical apparatus for explosive gas atmospheres Part 11: Intrinsic safety 'i'
60079-15	Electrical apparatus for explosive gas atmospheres Part 15: Electrical apparatus with type of protection 'n' (Non-Sparking)
60079-18	Electrical apparatus for explosive gas atmospheres Part 18: Encapsulation 'm'

Scope change for new editions as shown above.

The scope is for Group II applications only.

1.7. *Candidate ExCB Persons Interviewed*

Name	Position
Hae Duk Jung	General Manager
Eun Jung Shim	Certification Engineer

1.8. *Legal Entity of the Candidate ExCB*

KGS is a public body established under Article 28 of the High Pressure Gas Safety Control Law. There is a certificate of registration 140-82-00740 with the Taxation Department for KGS.

1.9. *Associated Testing Laboratories*

The ExTL is integral with the ExCB.

1.10. *Associated Certification Functions*

KGS issues certificates for gas appliances; it issues certification to ISO 9001 for all areas; to ISO 14000; and national Ex certification.

1.11. *National Marks and Certificates*

There is no mark for Ex, just a certificate for national certification. There is currently no form of manufacturer or market surveillance. In 2009 it is planned to change the regulation to include site audits of manufacturers. This will be based on the IECEx assessment requirements.

There is a KGS mark that is used in other areas.

1.12. ***Financial Support***
KGS receives about 50% financial support from the Government. The rest is met from inspection, training, R&D, testing and certification income.

1.13. ***History***
Initially established in 1974 with the name 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 a certification body for electrical explosion-proof performance.

1.14. ***Standards Accepted***
See clause 1.6 of this report

1.15. ***National Differences to IEC Standards***
National differences to IEC standards are listed in the latest version of the IECEx Bulletin.

2. ORGANISATION

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

Name	Title	Experience
Young Kweon Park (at time of assessment visit)	Director Institute of Gas Safety Diagnosis & Certification	35 years mostly at KGS but not specifically in Ex.
Heung-Sik Kim (replacing above from 20 December 2007)	Director Institute of Gas Safety Diagnosis & Certification	Has worked on KGS for about 30 years in various areas, including about 10 years in product certification; but no experience with Ex
Hae-Duk	General Manager	14 years in Ex

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

Name	Title	Experience
Hae-Duk Jung	General Manager, Hazardous Locations Equipment, and Quality Manager	14 years in Ex

2.3. *Name and Title of Nominated Principal Contact*

Name	Title	Comments
Hae Duk Jung	As above	hdjung@kgs.or.kr

2.4. *Name and Title of Signatories for Certification*

Name	Title	Comments
Hae Duk Jung	As above	
Young Kweon Park at time of assessment and subsequently Heung-Sik Kim	As above	Only when Hae Duk Jung not available

2.5. *Other Employees in ExCB activity*

Name	Title	Responsibility
Eun Jung Shim	Certification Engineer	2 years at KGS in Ex

2.6. *Organizational Structure*

There have been some changes in structure and staff since the initial assessment. The total staff of the 'Hazardous Locations' group in KGS is now 9 with two personnel in the ExCB. The most recent change in structure was in November 2007 when the reporting structure of the group was changed and Hae Duk Jung became General Manager of the group in addition to his role as head of the ExCB. He in turn reports to a newly appointed Director, Heung-Sik Kim.

The organisational structures are shown in Annex 1 and 2 of this report and also appear in Ex-M-02 of the Manual.

2.7. *Administration*

2.7.1. Administrative Structure
See Annex 1

2.7.2. Indemnity Insurance
KGS indemnity is covered by the government as it is a government agency. But in addition it has an indemnity insurance cover for of KRW10,000,000,000. This policy was viewed.

3. RESOURCES

There are two dedicated people in the ExCB. In addition the Director also has some roles in the ExCB operation, including Chairman of the Certification Committee.

4. COMMITTEES / Governing Board / Appeals / Advisory Board

There is a certification committee with its terms of reference defined in the procedure Ex-P-18 Certification and Test (5.1.5). The Director is the Chairman of this committee. It comprises 5 members, including the General Manager from KGS and 3 other people both from within and outside the Hazardous Locations Equipment Team. There are no external people. The committee members see the ExTR and QAR that will be used to issue a CoC and vote secretly on acceptance with a majority needed to accept. This is provides the decision on certification.

There is an internal audit group for auditing of finances and implementation of policies, compliance with regulations etc. The head of this group is appointed by the Government.

KGS also has a board that covers a range of high level functions, including supervision of finances, approval of major capital expenditure, major policy issues and the structure of KGS. It is not directly involved with certification functions.

5. CERTIFICATION OPERATIONS

5.1. *National Approval/Certification Methods*

See 1.11.

5.2. *Certification Policy*

The quality policy is defined in the Manual in Ex-M-0B. The policy includes reference to ISO/IEC 17025 and Guide 65 and specific reference to certification and testing. The policy is signed by the Director under delegation from the President.

5.3. *Application for Certification*

KGS has an application form for clients to use when applying for IECEx certification. The procedures for dealing with applications for certification are contained in Ex-P-18 Certification and Test. This document defines the responsibilities of the relevant personnel and the Certification Committee, and the scope.

Feedback is obtained in accordance with procedure Ex-P-08 Service to the Client. This is done by means of a questionnaire. A recent example of the survey and results was viewed.

As seen in Annex 2, separation between ExCB and ExTL is achieved through the use of different personnel in each area. In addition, as noted earlier, the certification committee also provides an independent role in the certification process.

5.4. *Withdrawal and Cancellation of Certificates*

Ex-I-02 Maintenance of Certification Registration addresses withdrawal and cancellation of certificates and ExTRs. The decision on cancellation is taken by the Certification Committee.

6. STATISTICS

6.1. Certificates Issued

Number of certificates issued under the IECEx, national or regional schemes in the preceding four years for each type of protection.

Local certificates issued:

	2005	2006	2007	May 30 2008
Ex d	232	197	311	113
Ex e	126	236	293	89
Ex p	53	30	96	20
Ex i	24	8	8	4
DP	3	35	13	6
Total	438	506	721	232

IECEx certificates issued:

	2005	2006	2007	May 30 2008
Ex d		2	4	2(Ex de) 2(Ex dem)
Ex e			3	
Ex p				
Ex i			1	
DP				
Total		2	8	4

7. DOCUMENTATION

7.1. Quality Manual
The main quality manual used for the Ex operation is called 'Manual' and is structured in accordance the clauses of ISO/IEC 17025 with each section numbered Ex-M-xx.

7.2. Procedures
The next level in the system is the procedures which are numbered Ex-P-xx

7.3. Work Instructions
At the next level are the guidance documents that are numbered Ex-I-xx.

7.4. Records
All records are retained in hard copy form.

7.5. Document Change Control
Document control is covered in Ex-P-04. All procedures and related documents are in printed form and subject to a document change control process. However, they are also available on the intranet system. The existing system did not address control of

IEC standards and IECEx documents but this was subsequently addressed to the satisfaction of the assessment team.

8. CONFIDENTIALITY

Confidentiality is addressed in Ex-M-27 of the Quality Manual. Each staff member is required to sign a confidentiality agreement. The file containing these agreements was viewed.

9. PUBLICATIONS

There is a magazine that is circulated by KGS every month.

10. NATIONAL ACCREDITATION

The Government authorises KGS to issue National Ex certificates. They also have formal accreditation as a certifying body to ISO/IEC Guide 65 from the Korea Accreditation System (KAS) – See Annex 2. This is valid until 23 December 2008. The scope of this accreditation needs to be extended to cover the latest editions of the standards covered by the scope shown in this report. KGS indicated that an assessment visit occurred just before the IECEx re-assessment but that revised accreditation scope has not yet been issued. Once the revised accreditation scope has been received a copy is to be provided to the assessment team and the IECEx Secretariat.

11. RECOGNITION AND AGREEMENTS

There are mutual recognition agreements in place with a number of bodies including Baseefa in the UK, LCIE in France, NEPSI in China, Simtars in Australia and FTZU in the Czech Republic.

12. INTERNAL AUDIT AND PERIODIC MANAGEMENT REVIEW

Management review is in Ex-M-15 and Ex-P-15. The internal audit for 7-8 August 2007 was viewed. It used a lead ISO auditor and a technical expert who is also an external auditor of manufacturers (not in the Ex field). The audit indicates it covers ISO/IEC 17025 and 17020. Another report was viewed covering ISO/IEC Guide 65 that took place on 11 December 2006. The audit for 2007 was scheduled for the week after the IECEx re-assessment. The 17025 audit raised an NCR on control of standards similar to that raised elsewhere in this report. This indicates that there may be a deficiency in the corrective action process. The procedures were subsequently revised to the satisfaction of the assessment team enabling closure of previous non-conformities.

13. SUBCONTRACTING, USE OF OTHER LABS AND USE OF OTHER LOCATIONS

KGS subcontract with KTL, an existing Accepted ExTL, for the measurement of screw threads, vibration tests for bi-pin tubes in luminaires, the impact test for Ex e batteries and the charging test in IEC 60079-0. There is no sub-contracting to other bodies. There is a file covering the subcontracting to KTL which shows the tests covered, the relevant accreditation from KOLAS is included in file and there is a signed contract that also includes a confidentiality agreement.

Witness testing requirements are contained in Ex-P-18 Certification and Test.

14. TRAINING

The computer system is used to record all external training, duty statements and qualifications.

A plan is developed for training each year and recorded in a file. The file shows the information about who attended the training and all the information about what was covered.

Procedure Ex-I-06 Certification of Employee addresses the assigning of competency to staff members. Ex-P-23 Assuring the Quality also covers how a plan is made for employees. There are personal competency certificates for each person and also a competency matrix.

15. ASSESSMENT OF MANUFACTURERS AND ISSUE OF QARS

The manufacturing assessments are generally done by Mr Jung but use may be made of Ex experts from the ExTL. Ms Shim is also under training as an IECEx assessor of manufacturers. The procedure for this is Ex-I-01.

Two QARs were reviewed as follows

> QAR KR/KGS/QAR06.0002/01 – Fuji Electric Instrumentation Company – Ex i and d surveillance audit. The report was comprehensive and a non-conformity raised during the audit was appropriately resolved.
>
> QAR KR/KGS/QAR07.0001/00 – Panasia Ltd – Ex i initial audit. A team of 4 people was used for this audit (one was in training). This report was also comprehensive and satisfactory.

16. COMPLAINTS AND APPEALS (Including appeals to IECEx)

Procedure Ex-P-09 addresses appeals, complaints and disputes. It includes specific reference to the potential to use of the IECEx Board of Appeal by the ExCB or the applicant. The process is managed by the Quality Manager. The applicant is informed of the appeal provision in the application form in Ex-P-18.

17. SPECIAL FACTS TO BE NOTED

17.1. Supporting Documentation

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat. These include:

- A site assessment report with details of issues raised and how these have been resolved
- Checklist for ISO/IEC Guide 65

18. COMMENTS (Including issues found during assessment)

Details of the issues raised by the assessment team are recorded in the site assessment report, retained by the secretariat. This report contains details of the resolution of the issues raised.

19. RECOMMENDATION

Based on the assessment performed on 3-4 December 2007, and subsequent follow-up actions, KGS is recommended for continued acceptance in the IECEx System as an IECEx Certification Body (ExCB) according to the scope of the standards listed in this document, including the extension of scope for later editions of the standards.

Jim Munro	Ron Webb
Lead Assessor	Expert Assessor

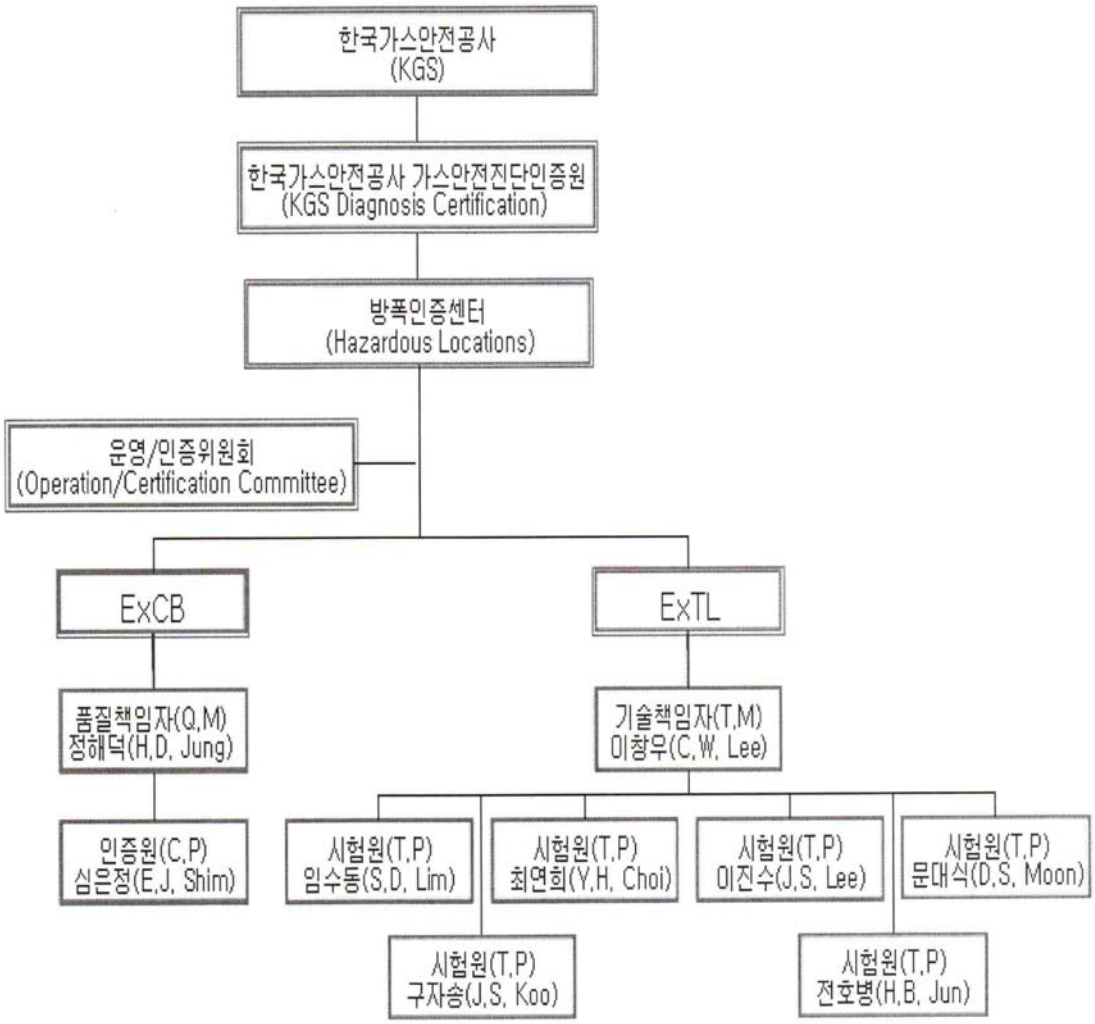
Date: 12 December 2008

List of Annexes:

1. Overall Organization Chart of KGS
2. Organization Chart of the Hazardous Locations Group
3. Accreditation to ISO/IEC Guide 65

Annex 1
Overall Organization Chart of KGS

Annex 2
Organization Chart of the Hazardous Locations Group



Annex 3

Accreditation to ISO/IEC Guide 65

NO. KAS-P-004

CERTIFICATE OF ACCREDITATION

1. Name of certification body : Korea Gas Safety Corporation
2. Name of representative : Park, Dal Young
3. Registration number of corporation : 1146/1-0001406
4. Address of corporation : 332-1, Daeya-dong, Shihung shi, Gyeonggi do, Korea
5. Address of certification office : 332-1, Daeya-dong, Shihung-shi, Gyeonggi do, Korea
6. Product, standard and scope of accreditation :
   - Gas burning appliances, Gas equipments and explosion-proof electrical equipments
     ISO, IEC, ANSI, KGS, EN standards(attached)
   - System Type : Ⅰa, Ⅰb, Ⅱ, Ⅲ, Ⅳ, Ⅴ
7. Period of validity : December 24, 2004 ~ December 23, 2008

This is to that the above body has been accredited for specific product certification systems in accordance with the National Standards Act and the requirements of ISO/IEC Guide 65:1996, inclusive of the KAS Guidance on the Accreditation and Surveillance of Product Certification Bodies.

October 4, 2005

Administrator,
Korea Accreditation System(KAS)