



ExMC/163/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 Certification Body 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 Ex Certification Body within the IECEx Scheme.**

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

**Address:
IECEx Secretariat
286 Sussex Street
Sydney NSW 2140
Australia**

**Tel: +61 2 8206 6940
Fax: +61 2 8206 6272
Email: chris.agius@iecex.com**



ExMC/163/R
August 2003

IECEX ASSESSMENT REPORT FORM

For ACB

(Accepted Certification Body)

Type of Assessment:

Initial Assessment for Candidate ACB
Surveillance Assessment for existing ACB

☒ X

☐

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
KOREA 429-712

16-17 October 2002

1.5 *Assessment References*

Document:

- i) IECEx 02 First Edition
- ii) IECEx Operational Document OD/003(ExMC/100/CD)
- iii) ISO/IEC Guide 65 1996
- iv) ACB application documents dated December 2000



ExMC/163/R
August 2003

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 ACB 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 ACB

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

1.9 Associated Testing Laboratories

Names of Laboratories	Address
The KGS ExTL is integral with the ACB	332-1 Daeya Dong, Shiyhung-Shi Gyongai-Do--Gyeonggi-Do KOREA 429-712

1.10 Associated Certification Functions

Issuing of certificates for Ex apparatus to be used in Korea



1.11 *National Marks and Certificates*

Certificates issued by KGS are recognised as conforming to the national law (Industrial Safety and Health Law, Article 33).

1.12 *Financial Support*

Self-funding

1.13 *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.

1.14 *Standards Accepted*

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: Electrical apparatus, type of protection 'p' (Pressurization)
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'

1.15 *National Differences to IEC Standards*

Korea has some national differences that were promulgated in Labour Ministry Notice 1998-65. Details are contained in the IECEx Bulletin.

2. ORGANISATION

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

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



ExMC/163/R
August 2003

2.2 Names, Title and Experience of the Quality Management Representative

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

2.3 Name and Title of Nominated Principal Contact

Name	Title
Jin Jun Kim	General Manager

2.4 Names and Title of Signatories for Certification

Name	Title
Jin Jun Kim	General Manager

2.5 Other Employees in ACB activity

Name	Title/Responsibility
Bum-Hwan Lim	Manager – Electrical Testing Certification

2.6 Organisational Structure

The ACB and TL come within the apparatus certification team. This 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. Detailed charts are shown at Annexes A and B.

2.7 Administration

2.7.1 Administrative Structure

KGS is a governmental agency and its Senior Executives, Board of Directors are all staff of KGS.

2.7.2 Terms of Reference of the Governing Board

See above. See also the Certification Committee below.

3. RESOURCES

KGS was judged as having all necessary resources for its operation in-house, including personnel trained and experienced in factory inspection / quality audits.



4. COMMITTEES

One Committee exists, Certification Committee approved by General Manager, Examination and Inspection Division--Gas Appliance Division. Quality Manual ACB-M-1000. Chapter 5, page 2 refers to role and terms of reference of the certification committee.

5. CERTIFICATION OPERATIONS

5.1 *National Approval/Certification Methods*

As noted earlier certificates issued by KGS are recognised as conforming to the national law (Industrial Safety and Health Law, Article 33).

5.2 *Certification Policy*

The documented quality system clearly distinguishes its Ex certification activities. The certification area is shown on the organisation chart as separate from the testing area.

The quality policy embraces certification and is as follows:

- To perform sincere IECEX Scheme
- To maintain the quality system in accordance with international standards
- To enhance the technical level of personnel through education and training
- To maintain the reliability of test equipment
- To improve the quality of certification and test

5.3 *Staff Work Instructions*

KGS has a comprehensive range of work instructions.

5.4 *Application for Certification*

The KGS website www.kgs.or.kr contains information on how to apply for certification. Details are also contained in the procedures.

6. STATISTICS

Certificates issued during the past 2 years:

Standard Number	Number of Certificates Issued		
	Year		
	2000	2001	2002.9
60079-1	300	247	208
60079-2	14	18	16
60079-7	125	197	99
60079-11	36	80	50
Special type 's'	25	18	5
61241-1-1	1	2	4
Total	501	562	382



7. DOCUMENTATION

7.1 Documents and Change Control

KGS operate a manual document control system.

8. RECORDS

The records are given specified retention time limits and are classified as follows:

- (1) Quality records
- (2) General documents and records
- (3) Records in the form of electronic files. These are printed and preserved.

9. CONFIDENTIALITY

All staff sign confidentiality agreements.

10. PUBLICATIONS

Relevant information is posted on the website www.kgs.or.kr.

11. APPEALS

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

12. NATIONAL ACCREDITATION

At the time of assessment, KGS did not hold independent national accreditation as a certifying body.

13. RECOGNITION AND AGREEMENTS

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

14. QUALITY MANUAL

KGS has a comprehensive quality manual.

15. INTERNAL AUDITS 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.

16. COMPLAINTS

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



ExMC/163/R
August 2003

17. WITHDRAWALS AND CANCELLATION OF CERTIFICATES

Covered by IECEx Quality System documentation.

18. 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.

19. 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.

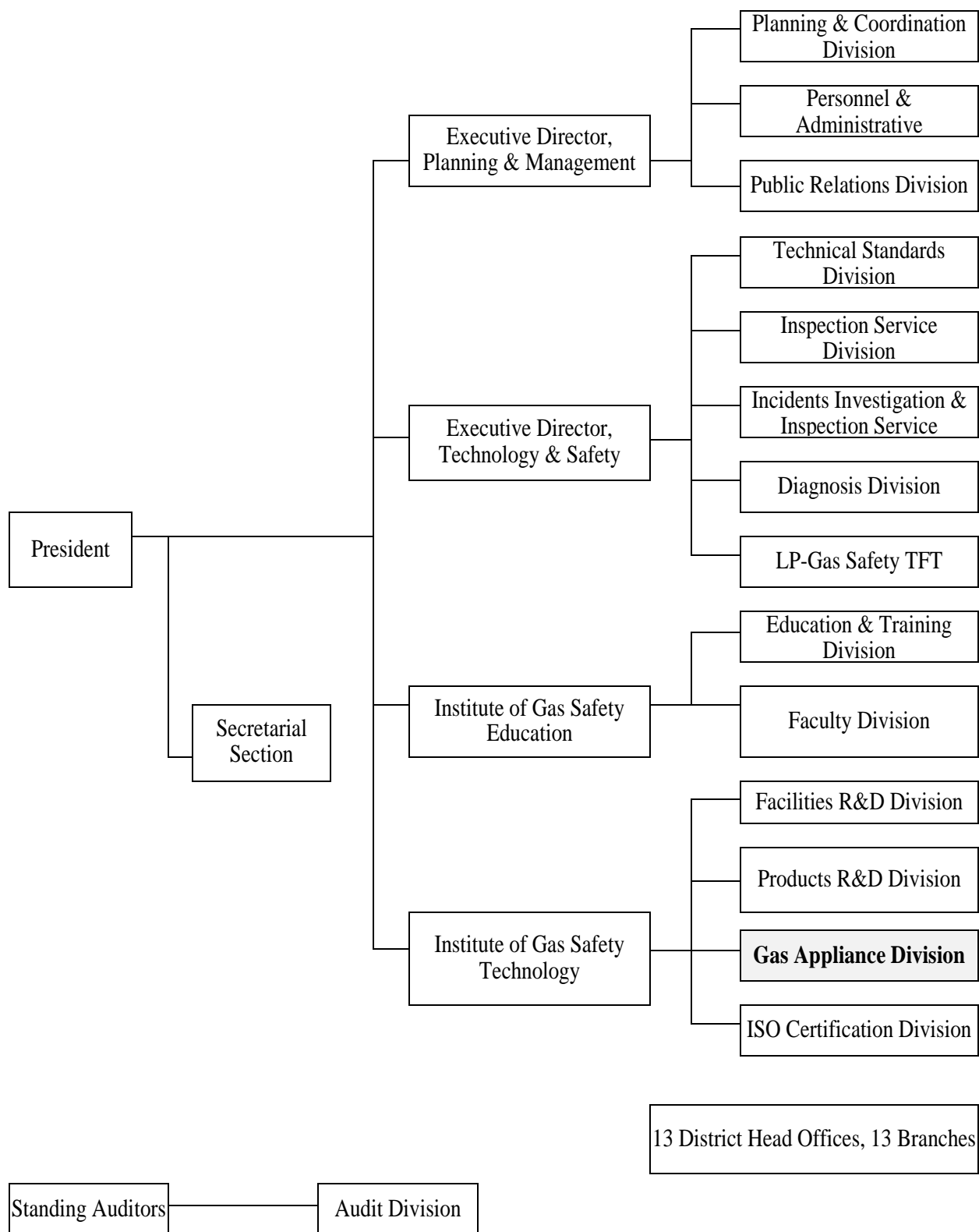
LIST OF ANNEXES

- A. Organisational Chart for KGS**
- B. Organisation of Examination Inspection Division**
- C. ISO/IEC Guide 65 Assessment Report**
- D. Site Assessment report [and follow up report on KGS Actions]**



ExMC/163/R
August 2003

Annex A Organisational Chart for KGS

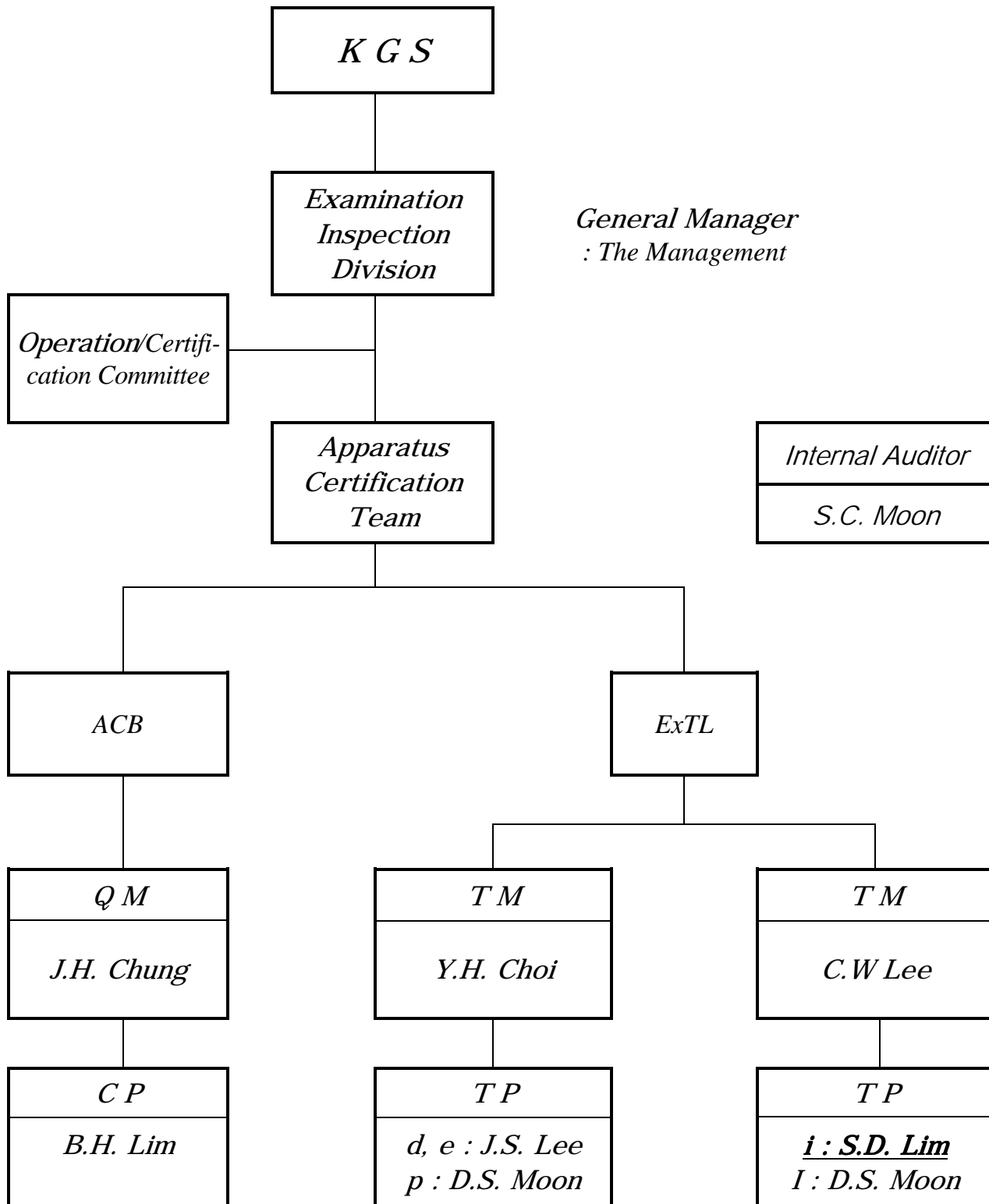




ExMC/163/R
August 2003

Annex B

Organisation of Examination Inspection Division



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



ExMC/163/R
August 2003

Annex C
IECEX OPERATIONAL DOCUMENT
No. Ex/OD/007/Version 2

**Title: IECEx ACB Assessment Checklist for
ISO/IEC Guide 65**

**Report on ISO/IEC Guide 65 Assessment conducted during On –site Assessment of
KGS, Korea. 16 + 17 October 2002**

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
1	Scope	<i>No requirements</i>	N/A
2	References	<i>No requirements</i>	N/A
3	Definitions	<i>No requirements</i>	N/A
4	Management requirements	<i>No requirements</i>	
4.1	Certification body	<i>No requirements</i>	
4.1.1	Policies and procedures non-discriminatory. Not used to impede or inhibit access by applicants	<i>A review of the KGS Quality Manual and Certification Procedures did not reveal any discriminatory procedures</i> <i>Documents:ACB-B-1000, ACB-B-1200, A-4100 – Standard for impartiality and participation in Activities</i>	Y
4.1.2	Services accessible to all applicants. No undue financial or other conditions. Not conditional on size, membership of associations or groups, nor number of certificates already issued.	<i>See 4.1.1 above</i>	Y
4.1.3	Products of a supplier evaluated against criteria in specified standards.	<i>The IECEx Management Committee determine the scope of the scheme</i>	N/A
4.1.4	Requirements, evaluation and decision on certification confined to matters in scope of the certification.	<i>KGS undertake to offer only those IECEx Services for which they are accepted. This matter is to be reviewed on an on-going basis</i>	Y
4.2	Organisation	<i>No requirements</i>	
	Structure such as to foster confidence in certificates, and in particular:	<i>Reviewed Organisation Charts contained in Manual ACB-M-1000. Chapter 5, page 2 refers to role of certification committee</i>	
a)	Be impartial	<i>ACB-A-4100 covers impartiality and requires staff to sign an oath (A4100-1)</i> <i>Sighted signed copies of A4100-1 by all Ex testing and certification Staff</i>	Y
b)	Be responsible for decision on granting, maintaining, extending, suspending and withdrawing certification.	<i>Signed application for the IECEx Scheme received including statement to abide by IECEx Rules</i>	Y



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
c)	Identify the management (committee, group or person) will overall responsibility for:	<i>No requirements</i>	
1)	Performance of testing, inspection, evaluation and certification	<p><i>ACB-B-1000 "certification Procedure" covers the general process however the following functions need to be identified:</i></p> <ul style="list-style-type: none"> <i>A review of the application (contract review) to verify that the applicant has applied for activities that are within the scope of KGS, how long the project is expected to take, how much it will cost.</i> <i>Reference to the application form</i> <i>Define who signs ATRs and Certificates</i> 	N
2)	Formulation of policy matters relating to the operation and the certification body	<i>ACB-M-1000 details the responsibilities and roles for establishing policy</i>	Y
3)	Decisions on certification	<i>While there are many detailed procedures to describe the Testing, Assessment and also the Certification Processes, ACB-B-1000 needs to reviewed to clearly identify which function signs each element of the ATR, Section1, 2 and cover page</i>	N
4)	Supervision on the implementation of policies	<i>ACB-M-1000 Chapter 5 defines this role as residing with the Quality Manager and ultimately the General Manager, Examination and Inspection Division</i>	Y
5)	Supervision of the finances of the body	<i>General Manager, Examination and Inspection Division (ACB-M-1000, Chapter 5).</i>	Y
6)	Delegation of authority to committees or individuals to undertake defined activities on its behalf.	<i>Covered by Quality Manual</i>	Y
7)	Technical basis for granting certification	<i>In compliance with the IECEx Scheme and detailed in Certification Procedures</i>	Y
d)	Have documents that demonstrate it is a legal entity.	<i>KGS is Governmental Agency, reporting to the Ministry of Commerce, Industry and Energy. This is identified on Website www.mocie.go.kr/eng/links</i>	Y



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
e)	Documented structure which safeguards impartiality including provisions to ensure impartiality of the operations of the certification body: structure enables participation of all parties significantly concerned in development of policies and principles.	<i>Organisation Structure is detailed in the KGS Quality Manual</i>	Y
f)	Ensure person takes each decision on certification different from those who carried out the evaluation.	<i>While this is the practise, ACB-B-1000 is to be revised to take into account item 4.2 c) 1 above</i>	N
g)	Have rights and responsibilities relevant to its certification activities.	<i>Covered by Quality Manual</i>	Y
h)	Have adequate arrangements to cover liabilities arising from operations and/or activities.	<i>Government Agency and backed by Government</i>	Y
i)	Have financial stability and resources required for operation of a certification system.	<i>Yes. Have been in operation for 29 years and supported by the Korean Government, as a government agency</i>	Y
j)	Employ sufficient number of personnel with necessary education, training, technical knowledge and experience for type, range and volume of work under responsible senior executive.	<i>Quality Manual details staff under direct employment and is adequate for the scope of KGS application within IECEx</i>	Y
k)	Have quality system giving confidence in ability to operate a certification system for products.	<i>A very comprehensive documented Quality System is in place and a great deal of recent work noted on its revision to prepare for the IECEx Assessment.</i>	Y
l)	Have policies and procedures that distinguish between product certification and other activities.	<i>The documented quality system has been subjected to a major overhaul in order to clearly distinguish its Ex Certification activities</i>	Y
m)	Together with senior executive and staff be free from any commercial, financial and other pressures which might influence the results of the certification process.	<i>KGS is a governmental agency and its Senior Executives, Board of Directors are all staff of KGS.</i>	Y
n)	Have formal rules and structures for appointment and operation of any committees which are involved in the certification process; such committees from any commercial, financial and other pressures that might influence decisions; structure with members with balance of interests satisfies this.	<i>One Committee exists, Certification Committee approved by General Manager, Examination and Inspection Division. The role and terms of reference are detailed in the Quality manual.</i>	Y



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
o)	Ensure activities of related bodies do not affect confidentiality, objectivity and impartiality of certifications and shall not:	<i>KGS other divisions do not impact on the Examination and Inspection Division, for which the IECEx activities reside.</i> <i>KGS plan to include IECEx information on their Intranet and website once they are accepted as an IECEx ACB</i>	Y
1)	Supply or design products of types it certifies.	No	Y
2)	Give advice or provide consultancy services as to methods of dealing with matters which are barriers to certification.	No	Y
3)	Provide other products or services that could compromise confidentiality, objectivity or impartiality of certification process and decisions.	No	Y
p)	Have policies and procedures for resolution of complaints, appeals, and disputes from suppliers or other parties about handling of certification or other related matters.	<i>ACB-A-5000 "Complaints and Appeals Handling Procedure" also form B5000-1 is the form to be completed concerning complaints and appeals.</i> <i>To date no complaints received in the Ex department</i>	Y
4.3	Operations	No requirements	N/A
	Take all steps necessary to evaluate conformance with relevant product standards. Shall specify relevant standards and any other requirements.	<i>ACB-B-2000 details the testing and evaluation of Products.</i> <i>KGS have signed a commitment to abide by the rules and operation of the IECEx Scheme. This will include application of the Standards within the IECEx Scheme and Clarification sheets prepared by ExTAG</i>	Y
	Observe requirements for suitability and competence of bodies or persons carrying out testing, inspection and certification/registration to relevant guides.	See above	Y
4.4	Subcontracting	No requirements	
	Where subcontracting, properly documented agreement covering arrangements including confidentiality and conflict of interest. Certification body shall:	<i>IECEx Scheme only permits subcontracting of work where this is notified to the Management committee and included as part of the overall assessment of the Body.</i>	N



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
a)	Take full responsibility for subcontracted work and maintain responsibility for granting, maintaining, extending, suspending or withdrawing certification.	ACB-B-3000 needs to be amended to clearly show that Subcontracting testing cannot be used when KGS is preparing to issue an IECEx ATR or Certificate.	
b)	Ensure subcontracted body or person competent and complies with relevant standards and guides; and not involved with design or production of product.		
c)	Obtain applicant's consent.		
4.5	Quality system	<i>No requirements</i>	
4.5.1	Policy, objectives and commitment to quality documented. Ensure implemented, understood and maintained.	<i>Covered in ACB-M-1000 Chapter 2 Quality Policy</i>	Y
4.5.2	Operate effective documented quality system. Designate person with direct access to highest executive level with defined authority for:	<i>A comprehensive documented quality system is in place with an appointed Quality Manager, Mr Chung, who reports directly to the General Manager, Mr JJ Kim.</i>	Y
a)	Ensuring quality system established, implemented and maintained.	<i>Verified that Internal auditing is an integral part of the KGS Quality system.</i>	Y
b)	Reporting and performance of system to management for review and improvement.	<i>A full review of the recent internal audit took place and verified that Non Conformances raised during the Internal audit have been satisfactorily addressed</i>	
4.5.3	System documented in quality manual and procedures and contain or refer to:	<i>A very comprehensive documented system is maintained</i>	Y
a)	Quality policy statement.	<i>See 4.5.1</i>	Y
b)	Description of legal status.	<i>Fully covered by ACB-M-1000 Chapter 4</i>	Y
c)	Names, qualifications, experience and terms of reference of senior executive and other certification personnel, internal and external.	<i>Detailed throughout the Quality Manual, Chapter 5</i>	Y
d)	Organisation chart.	<i>Covered by Quality Manual</i>	Y
e)	Description of the organisation of the certification body.	<i>Covered by Quality Manual</i>	Y
f)	Policy and procedures for management reviews.	<i>Covered by ACB-A-1000 Noted that a management review meeting was held on 2002 09 06, Report of this meeting was sighted, however all reports of meetings must include a list of people present</i>	Y OBS
g)	Administrative procedures including document control.	<i>Covered by Document Control Procedures.</i>	Y



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
h)	Operational and functional duties pertaining to quality.	<i>Covered by the Quality Manual, Chapter 5</i>	Y
i)	Procedure for recruitment, selection and training of certification personnel and monitoring of performance.	<i>Dedicated procedure for Education and Training, ACB-A-4000. This is supported by the Internal audit procedure which includes verification of on-going</i>	Y
j)	List of approved subcontractors and procedures for assessing, recording and monitoring competence.	<i>No subcontractors have been notified to IECEx at this stage. Therefore KGS are not to use Subcontractors for the purpose of conducting IECEx assessment and Testing</i>	N/A
k)	Procedures for handling non-conformities and assuring effectiveness of corrective and preventative actions.	ACB-A-5100 needs to be amended to clearly identify the KGS practice that KGS staff may raise a non-conformance by completing form A-5100-1 and submit to the quality manager	N
l)	Procedures for evaluating products and implementing certification process, including:	<i>Covered by IECEx Quality System</i>	Y
1)	Conditions for issue, retention and withdrawal of certification documents.		
2)	Controls over use and application of documents employed in certification of products.		
m)	Policy and procedure for appeals.	<i>Covered by A5000</i>	Y
n)	Procedures for internal audits, based on ISO 10011-1.	<i>Covered by A2000</i>	Y
4.6	Conditions and procedures for granting, maintaining, extending, suspending and withdrawing certification	<i>No requirements</i>	
4.6.1	Specifies conditions and procedures for granting, maintaining and extending certification and conditions for suspending and withdrawing certification partially or in total.	<i>Generally covered by ACB-B-1200 noting that ACB-M-1000 Chapter 5 states that the Certification committee makes the decision to grant, maintain, suspend or withdraw certification. To be reviewed when ACB-B-1000 is revised, to ensure this is consistent</i>	Y
4.6.2	Have procedures to:		
a)	Grant, maintain, withdraw and if applicable suspend certification.		
b)	Extend or reduce scope of certification.		
c)	Re-value if changes significantly affecting design, or changes in standards, or changes in ownership, structure or management of supplier, or in case of other information that product may longer comply with certification system.		



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
4.7	Internal audits and management reviews	<i>No requirements</i>	
4.7.1	Conduct periodic internal audits to verify quality system implemented and effective. Ensure that:	<i>Fully covered by ACB-A-2000. Records of Internal audits and corrective actions were confirmed, including documented records</i>	Y
a)	Personnel in area audited informed.		
b)	Corrective action is timely and appropriate.		
c)	Results documented.		
4.7.2	Quality system reviewed at defined intervals. Records of reviews maintained.	<i>ACB-A-1000 Clause 4 covers this</i>	Y
4.8	Documentation	<i>No requirements</i>	
4.8.1	Provide update at regular intervals and make available on request:		
a)	Information above authority under which body operates.	<i>Sighted Company brochures and use of Internet website www.kgs.or.kr</i>	Y
b)	Statement of its product certification system and rules.		
c)	Information on evaluation procedures.	<i>Covered by ACB-B-1300</i>	Y
d)	Description of means of financial support and fees to applicants and suppliers.	ACB-B-1400 provides internal information and refers to the KGS website. However note that the website includes only Korean Language. KGS will provide an English version of this information for their website	N
e)	Description of rights and duties of applicants and suppliers.		
f)	Information about procedures for handling complaints, appeals and disputes.		
g)	Directory of certified products and their suppliers		
4.8.2	Establish and maintain procedures to control documents and data.	<i>ACB-A-3000 covers document control.</i>	Y
4.9	Records		
4.9.1	Maintain record system to suit circumstances.	<p><i>The quality system uses a system for records which is consistent with identification system used for procedures. As KGS are not yet operating as an IECEx ACB, there were no examples of issued ATRs</i></p> <p><i>However did sight Certificate Number 01-1-135-Q1 for Korean Domestic Standard.</i></p> <p><i>Further records pertaining to the Quality system were sighted according to ACB-A-3300</i></p>	Y



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
4.9.2	Policy and procedures for retaining records and for access to those records.	ACB-A-3300 covers the management of records.	Y
4.10	Confidentiality		
4.10.1	Adequate arrangements to safeguard confidentiality.	Covered by ACB-A-4200 and sighted completed forms signed KGS Staff	Y
4.10.2	Except as required information gained not disclosed to third-party.	ACB-A-4200 is to be reviewed to clearly describe the method for backing up electronic versions of completed IECEx ATRs, when KGS is operating as an IECEx ACB	OBS
5	Certification body personnel	No requirements	
5.1	General	No requirements	
5.1.1	Personnel competent.	Mr J J Kim, General Manager, is the KGS representative to the IECEx Scheme Mr Chung, Quality Manager is responsible for all testing and certification matters, including IECEx Mr Chung was interviewed and found to have a good knowledge of Certification processes and systems	Y
5.1.2	Clearly documented instructions available describing duties and responsibilities.	Covered by ACB-M-1000 Chapter 5	Y
5.2	Qualification criteria	No requirements	
5.2.1	Minimum relevant criteria for competence of personnel defined.	ACB-M-1000 Chapter 5 details this	Y
5.2.2	Personnel required to sign a contract or other document to commit to:	Covered by ACB-A-4200 Also sighted completed and signed documents	Y
a)	Comply with rules, including confidentiality and conflict of interest.		
b)	Declare any prior and/or present association with supplier or designed of products.		
	Ensure and document how contracted personnel and their employer satisfy all requirements for personnel.		
5.2.3	Information on qualifications, training and experience of personnel maintained. In particular:	Covered by ACB-A-4000. Also sighted training records and files.	Y
a)	Name and address.		
b)	Organisation affiliation and position.		
c)	Educational qualification and professional status.		



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
d)	Experience and training in each field.		
e)	Date of most recent updating of records.		
f)	Performance appraisal.		
6	<i>Changes in the certification requirements</i> Give due notice if intend to change requirements. Take account of views of interested parties. Verify supplier makes adjustments.	<i>KGS undertake to comply with IECEx rules as amended from time to time. This will also include giving due notice of any changes</i>	Y
7	Appeals, complaints and disputes	<i>No requirements</i>	
7.1	Appeals, complaints and disputes brought before certification body subject to procedures of certification.	ACB-A-5000, clause 6.2 to be amended to remove the possibility for the Quality Manager to make a decision to reject an appeal or complaint.	N
7.2	Shall:	<i>No requirements</i>	
a)	Keep record of all appeals, complaints and disputes and remedial actions.	<i>Covered by ACB-A-5000</i>	Y
b)	Take appropriate action.		
c)	Document action and effectiveness.		
8.	Application for certification	<i>No requirements</i>	
8.1	Information on the procedures	<i>No requirements</i>	
8.1.1	Provide applicants up-to-date detailed description of evaluation and certification procedures, including rights and duties of suppliers, and fees.	<i>Form B 1000-1 "General application Form" to be expanded to also make provisions for applications of IECEx.</i>	Y OBS
8.1.2	Require supplier:	<i>No requirements</i>	
a)	Always complies with certification programme.	<i>Covered by ACB-B-1300</i> <i>However, Application form and rules, document B-1000-1 and -2 are currently only available in Korean, but KGS have committed to produce an English version for use in the IECEx Scheme</i>	Y OBS
b)	Makes all necessary arrangements for conduct of evaluation.		
c)	Makes claims regarding certification only in respect of scope for which certification granted.		
d)	Does not use product certification in way to bring certification body into disrepute, and not makes misleading or unauthorised statement.		
e)	Upon suspension or cancellation of certification discontinues advertising and returns certification documents.		
f)	Uses certification only to indicate products certified as being in conformity with standards.		



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
g)	Endeavours to ensure no certificate or report used in misleading manner.		
h)	In making reference to product certification in media complies with requirements of certification body.		
8.1.3	When desired scope of certification is related to specific system, explanation provided to applicant.	<i>Covered by Quality System</i>	Y
8.1.4	If requested additional application information to applicant.	<i>Covered by Application review</i>	Y
8.2	The application		
8.2.1	Shall require completion of official form, signed by authorised representative of applicant in which or attached to which are:	<i>See 8.1.2 above</i>	Y OBS
a)	Scope of desired certification		
b)	Statement applicant agrees to comply with requirements for certification and to supply information.		
8.2.2	As minimum applicant shall provide:		
a)	Corporate entity, name, address and legal status.		
b)	Definition of products to be certified and standards.		
9	Preparation for evaluation		
9.1	Before proceeding shall conduct and maintain records of review to ensure that:	<i>See 4.2.1 c) 1 above</i>	Y OBS
a)	Requirements clearly defined, documented and understood.		
b)	Differences in understanding resolved.		
c)	Capabilities to perform service.		
9.2	Plan for evaluation prepared.	<i>Covered by the quality system and manual</i>	Y
9.3	Personnel assigned and conflict of interest avoided.	<i>Covered by Quality system and earlier comments</i>	Y
9.4	Personnel provided with appropriate working documents.	<i>As part of the documented quality system, all relevant personnel have access to procedures, manuals and standards</i>	Y
10	Evaluation Evaluate products against standards.	<i>Part of the IECEx Scheme Rules</i>	Y
11	Evaluation report Minimum procedures:		
a)	Personnel provide certification body with report of findings as to conformity.	<i>Note that ACB-B-1000 to be reviewed</i>	Y OBS



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
b)	Full report of outcome brought to applicant's notice, identifying any non-conformities.		
12	Decision on certification		
12.1	Decision taken.	<i>Covered by Quality system but noting pending revision of ACB-b-1000</i>	Y OBS
12.	Not delegate authority for granting, maintaining, extending, suspending or withdrawing certification to outside body.	<i>Covered by Quality system</i>	Y
12.3	Provide supplier with formal certification documents such as letter of certificate. These shall permit identification of:	<i>IECEX Scheme requirements.</i> <i>Did sight certificate of approval but was in Korean, English version in line with IECEx scheme, eg ATR forms are to be used once accepted into the IECEx Scheme</i>	Y
a)	Name and address of supplier.		
b)	Scope of certification including.		
1)	Products certified.		
2)	Product standards.		
3)	Applicable certification system.		
12.4	In response to application for amendment decide what evaluation is appropriate.	<i>In accordance with IECEx Rules IECEx 02</i>	Y
13	Surveillance	<i>No requirements</i>	
13.1	Have documented procedures.	<i>Covered by ACB-D-1000</i> Assessment criteria shall be that as specified by the IECEx Scheme and not ISO 9000 alone (see ACB-D-1000, 5.1) <i>Also sighted audit report forms, including non conformance reports.</i> <i>These are currently only in Korean but will be translated to English</i>	N OBS OBS
13.2	Require supplier to inform of any changes.	<i>Included in IECEx rules</i>	Y
13.3	Document surveillance activities.	<i>Covered by ACB-M-1000 Chapter 14</i>	Y
13.4	Periodically review marked products.	<i>Covered by ACB-M-1000 Chapter 14</i>	Y
14	Use of licences, certificates and marks	<i>No requirements, as no IECEx Mark yet available</i>	
14.1	Exercise control over ownership, use and display of licenses certificates and marks.	<i>Included in IECEx Rules</i> <i>To be specified by IECEx Rules</i>	Y
14.2	Guidance on use of certificates and marks permitted.		
14.3	Incorrect references etc dealt with.		
15	Complaints to suppliers Require supplier to:	<i>Covered by IECEx Rules and new IECEx Operational Document OD 005.</i>	Y
a)	Keep record of complaints.		
b)	Take action on complaints.		



ExMC/163/R
August 2003

Guide 65 Clause No	Title/requirement	Comments/Assessor's Notes	Complies Y/N or NA
c)	Document actions.	<i>This new Document should be referenced by the KGS procedure</i>	

OTHER COMMENTS AND OBSERVATIONS:

1 KGS have produced a very comprehensive Manual "Explosion Proof Certification and Testing Manual" Document ACB-M-1000, Date of enactment: 2001-7-13. This manual consists of 22 Chapters and is supported by the following set of procedures:

- ACB-A- General Procedures
- ACB-B- Certification and Testing Procedures
- ACB-C- Safety and Environment Manage
- ACB-D- Manufacturer's Quality System assessment Procedures

2 KGS have not nominated any subcontractor test facility to IECEx, at this stage. Therefore, KGS cannot use any subcontract facility.

ASSESSOR: Chris Agius

TEAM LEADER: Jim Munro



ExMC/163/R
August 2003

Annex D

	FOLLOW UP ASSESSMENT REPORT
BODY UNDER ASSESSMENT:	Institute of Gas Safety Technology Korea Gas Safety Corporation (KGS)
SITE(S) ASSESSED:	KGS 332-1 Daeya Dong, Shiyhung-Shi Gyongai-Do KOREA 429-712

**IECEX SITE ASSESSMENT TEAM
LEADER:**

Mr Jim Munro – Team Leader
Mr Ron Webb – Assessor
Mr Chris Agius – Assessor

REPRESENTATIVE OF BODY:

Jin Jun Kim General Manager

DATE(S) OF SITE ASSESSMENT:

16 & 17 October 2002

**Distribution: IECEx Secretary (original) copies to Body Assessed,
Team Members, (where applicable).**



ExMC/163/R
August 2003

ACCEPTED CERTIFICATION BODY (ACB) ☒

Ex TESTING LABORATORY (ExTL) ☒

ASSESSMENT TYPE:	IECEX Site Assessors	ACB/ExTL Representative:	ATTACHMENTS	No. of Pages
Application: X			Appendix A	3
Surveillance:	Jim Munro	Jin Jun Kim	Corrective Action	
Re-Assessment:	Chris Agius		Report from KGS	
Other:	Ron Webb			
Assessment duration: Days. 2				
RECOMMENDATION BY IECEx ASSESSOR(S) <p style="text-align: center;">That Acceptance be granted: conditional on agreement that a follow up visit be made by a member of the assessment team within the next six months</p>				

Assessment of ACB

The assessment revealed the following matters requiring corrective action.

	Issue	Recommendation
1.	Procedures in reference to subcontracting but no work is subcontracted.	Amend to remove reference to subcontracting for IECEx work
2.	Responsibilities are unclear	Review of the certification procedures to clarify who does what and when, eg contract review, signing of certificates and ATRs.
3.	There is no procedure to cover KGS staff raising Non conformance, eg what form to use and who to submit.	Procedure to be developed.
4.	Public information on Ex certification is only in Korean	Amend website to include English version.
5.	Complaints procedure allows the possibility for Quality Manger to decide to accept or not.	Amend procedure.
6.	Surveillance procedures to refer to IECEx criteria and not just ISO 9000	Amend procedure.



ExMC/163/R
August 2003

Assessment of ExTL

The assessment revealed the following matters requiring corrective action.

	<i>Issue</i>	<i>Recommendation</i>
1.	Possible concern over the fact that only one Ex i expert is present and therefore level of checking may be a potential issue.	Consider means to ensure checking occurs.
2.	With expansion may need to include detailed procedures covering intrinsic safety assessment	For noting.
3.	Audit revealed little experience in the application testing/assessment to IEC standards. There were no examples of reports to view.	That KGS should prepare at least one ATR for Ex i, Ex d and Ex e and submit these to the team for review
4.	No experience shown for Group I	That the scope should limited to Group II or KGS find the means to demonstrate experience with Group I
5.	Temperature measurement on small components appears to be inadequate.	KGS to develop better measurement methods
6.	Equipment for IP 2X, 3X and 4X could not be located	Evidence of existence and current calibration to be provided
7.	Some test/assessment data is recorded on pieces of paper and is therefore uncontrolled.	System to be developed to record data such as proformas or record books.

Resolution of Issues

KGS have provided a report in their corrective actions and this is attached at Attachment A

The assessment team leader reviewed the report and associated documentation.

It was noted that KGS have made an excellent effort address the corrective actions. However, some issues where found with the preparation of the sample ATRs that requires further attention.

In view of the above the team can now make recommendation on acceptance to KGS, subject to the condition contained earlier in this report.

Attachment "A" - KOREA GAS SAFETY CORPORATION

To : IECEx Assessment Team Leader

Date : 3 March 2003

Subject : Corrective Action Report for IECEx Site Assessment

✍ This Report is made according to the site assesement Report conducted as following.

IECEx SITE ASSESSMENT TEAM : Mr Jim Munro – Team Leader
Mr Ron Webb – Assessor
Mr Chris Agius – Assessor

REPRESENTATIVE OF BODY: Jin Jun Kim General Manager

DATE(S) OF SITE ASSESSMENT: 16 & 17 October 2002

✍ **Comment**

Site Assessment Report for Assessment of IECEx Candidate and Accepted Certification Bodies (ACBs) and Ex Testing Laboratories (ExTLs)

✍ **Action**

KGS have made corrective actions to resolve the outcomes from the site assessment and submit the corrective action report to the assessment team for review.

KOREA GAS SAFETY CORPORATION

Address:

332-1 Daeya-Dong, Shihung-Shi, Gyonggi-Do, Korea 429-712

Tel: +82 31 310 1490, 1547

Fax: +82 31 315 4365

Email: lcw@kgs.or.kr

CORRECTIVE ACTION REPORT

1. Corrective action of ACB

No.	ISSUE	RECOMMENDATION	CORRECTIVE ACTION	COMPLETION date
1	Procedures in reference to subcontracting but no work is subcontracted.	Amend to remove reference to subcontracting for IECEX work	Removed the subcontracting procedures -Chapter 8, M-1000(Manual) -B-1300(Subcontracting procedures)	Removed on Dec.15, 2002
2	Responsibilities are unclear	Review of the certification procedures to clarify who does what and when, eg contract review, signing of certificates and ATRs.	Amended "Rights and Responsibilities" in the rated procedures -GM does signing of Certificates and ATRs 3.1 of Chapter 5 of M-10000 3.1 of A-6000 Organization and work Assignment procedures -QM does contract of Review 4.3 and 4.5 of Chapter 7, of M-1000 5.4 and 5.6 of B-1000(Certification procedure)	Revised on Dec.15, 2002
3	There is no procedure to cover KGS staff raising Non conformance, eg what form to use and who to submit.	Procedure to be developed.	Developed the procedure of KGS staff can raise non-conformance -Chapter 9 of M-1000(Control of Nonconforming work Management) -3 of B-2400(Std. For Nonconforming work management) -Added 3.1(Proposal of nonconformities) of B-2400 3. and 3.1. of A-5100(Std. For corrective action)	Revised on Dec.15, 2002
4	Public information on Ex certification is only in Korean	Amend website to include English version.	Amended website of KGS to include English version -Website : www.kgs.or.kr / English / Business / Testing and Certification of Ex Equipment	(Posted on Feb. 28, 2003)
5	Complaints procedure allows the possibility for Quality Manger to decide to accept or not.	Amend procedure.	Amended the complaints procedure so that every complaints can be accepted and make a proposal to the GM. -6.6.2 of A-5000 (Complaints and Appeal Handling procedures)	Revised on Dec.15, 2002
6	Surveillance procedures to refer to IECEX criteria and not just ISO 9000	Amend procedure.	Amended the related procedures so that surveillance procedures can refer to IECEX criteria. -5.1, 6.3.1, 6.8.1 of D-1000(QMS Assessment procedure) -4. of D-1200(Std for Nonconformity Judgment)	Revised on Dec.15, 2002

2. Corrective action of ExTL

No.	ISSUE	RECOMMENDATION	CORRECTIVE ACTION	COMPLETION date
1	Possible concern over the fact that only one Ex i expert is present and therefore level of checking may be a potential issue	Consider means to ensure checking occurs.	One test engineer employed to the intrinsic safety section - Soo Dong Lim has joined a team Feb. 13. 2003. - Refer to Education and history card.	Feb. 13, 2003
2	With expansion may need to include detailed procedures covering intrinsic safety assessment	For noting.	Build assessment procedure - ACB-B-2200 Chapter 30	Feb. 5. 2003
3	Audit revealed little experience in the application testing/ assessment to IEC standards. There were no examples of reports to view.	That KGS should prepare at least one ATR for Ex i, Ex d and Ex e and submit these to the team for review	Prepared ATR for each concept - Ex d : Fluorescent lamp - Ex e : Junction box - Ex i : Shunt -diode safety barrier Purchase or amendment of test equipment. 1. IP test equipment(See No.6) 2. Ex "d" Reference pressure test - Purchase order have made to change reference pressure sensing system for Ex "d"(Piezo type sensor and Amplifier, PC) - Install the pneumatic valve inside of the explosion chamber to block the explosion pressure and flame. 3. Ex "e" Battery. IEC60079-7 5.7.1 - Bought hydrogen detection test rig.	Mar. 18. 2003
4	No experience shown for Group	That the scope should be limited to Group II or KGS find the means to demonstrate experience with Group	Limit the work scope to Group II	Feb. 28. 2003
5	Temperature measurement on small components appears to be inadequate.	KGS to develop better measurement methods	Purchased thin thermocouples which is 36AWG(0.127mm diameter)	Feb. 28. 2003
6	Equipment for IP 2X, 3X and 4X could not be located	Evidence of existence and current calibration to be provided	Purchased IP test rig and calibration completed. IP1X, IP2X, IP3X, IP4X Manufacturer : Ergonomics	Feb. 13. 2003
7	Some test/ assessment data is recorded on pieces of paper and is therefore uncontrolled.	System to be developed to record data such as proformas or record books.	Include test/assessment data and uncontrolled pieces of papers in the test procedure and assessment procedure - ACB-B-2200	Feb. 5. 2003