**ExMC/1140/DV**
**July 2016**

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

**TITLE: IECEx Assessment Report for the acceptance of Suzhou Electrical Apparatus Science Research Institute Co., Ltd., EETI, as an Accepted IECEx Test Laboratory (ExTL)**

**Circulation to: Members of the IECEx Management Committee, ExMC**

## INTRODUCTION

This document contains the IECEx Assessment Report for the acceptance of Suzhou Electrical Apparatus Science Research Institute Co., Ltd, EETI, as an IECEx Test Laboratory (ExTL) within the IECEx Scheme.

The report is hereby submitted for voting by the ExMC.

Please consider the assessment report and return the completed voting form, a separate Word document,

to the **Secretariat** by **2016 08 22.**

**Your speedy response to the voting process will be very much appreciated**

*Chris Agius*

**IECEx Secretariat**

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Secretariat



IEC System for certification to standards relating to equipment for use in Explosive Atmospheres (IECEx System)

IECEx Assessment Report Form

IECEx Assessment Report Form for use by IECEx Assessment Teams to report Assessments conducted according to the IECEx Assessment Procedures of

a) Operational Document IECEx OD 003-2 for the Certified Equipment Scheme
b) Operational Document IECEx OD 016 for the Certified Service Facility Scheme
c) Operational Document IECEx OD 022 for the IECEx Conformity Mark Licensing System

IECEx ExCB/ExTL assessment report for EETI:

**Suzhou Electrical Apparatus Science Research Institute Co., Ltd.**
**No. 5, Qianzhu Road, Yuexi, Wuzhong district, Suzhou,**
**Jiangsu Province, 215104 China**

Secretariat



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(Update when report is complete – by right click, Update field, Update entire table)

Secretariat



# 1 Assessment information

## 1.1 Type of Body covered by this assessment:

| | |
|---|---|
| ExCB for IECEx Certified Equipment Scheme | |
| ExTL for IECEx Certified Equipment Scheme | ✓ |
| ExCB for IECEx Certified Service Facilities Scheme | |
| ExCB for IECEx Conformity Mark Licensing System | |

NOTE 1 ExCB - IECEx Certification Body

NOTE 2 ExTL - IECEx Testing Laboratory

## 1.2 Type of assessment:

| | |
|---|---|
| Pre-assessment for candidate body | |
| Initial assessment for candidate body | ✓ |
| Surveillance | |
| Re-assessment | |
| Scope extension | |

## 1.3 Details of body

### 1.3.1 Country

China

### 1.3.2 Name of body

Suzhou Electrical Apparatus Science Research Institute Co., Ltd.
No. 5, Qianzhu Road, Yuexi, Wuzhong district, Suzhou,
Jiangsu Province, 215104 China

At this above mentioned address the Ex-TL is located and the Ex-testing is being performed.

There is a second address, where Suzhou Electrical Apparatus Science Research Institute Co., Ltd. is located, which is:
Suzhou Electrical Apparatus Science Research Institute Co., Ltd.
No.7, Yonghe Street, Binhe Road, Suzhou, Jiangsu, China

At this second address no Ex-testing is being performed.

### 1.3.3 Name and title of nominated principal contact

| **Name** | **Title** | **E-mail address** |
|---|---|---|
| **Ms. Crystal Zhang** | **Secretary of Mr. Hu Delin** | **hdl@eeti.cn** |
| Ms. Crystal Zhang shall be registered at the IECEx website as well. | | |
| | | |
| Hu Delin | President | eservice@eeti.cn |
| Li Lihua | Vice President | eservice@eeti.cn |
| Chen Xuemei | Vice Chief engineer | eservice@eeti.cn |

### 1.4 Assessment information

#### 1.4.1 Members of the assessment team

| Name | Role (modify as necessary) |
|---|---|
| Heinz Farke | Lead Assessor Trainee |
| Thierry Houeix | Lead Assessor and Expert Assessor |

#### 1.4.2 Place(s) of assessment

No. 5, Qianzhu Road, Yuexi, Wuzhong district, Suzhou,
Jiangsu Province,
215104 China

#### 1.4.3 Assessment date(s)

25th to 27th January 2016

### 1.5 Application information

Date of application: 10th August 2015

### 1.6 Scopes

#### 1.6.1 ExCB scope for equipment certification scheme

EETI is an associated ExTL to the following ExCB:
China Quality Mark Certification Group Co., Ltd (Abbreviation: CQM)
For full scope of CQM please refer to the IECEx website.

The relation between CQM and EETI covers the following standards:
The assessment covers all three groups (Group I, II and III) related to the listed standards.
However, the groups that can be used in relationship with the associated ExCB (CQM): depends finally on the scope of the ExCB (CQM).
Refer to the IECEx website:
“All gas standards are for Group II only, where relevant.”

| Number | Title |
|---|---|
| IEC 60079-0 Edition 6 | Explosive atmospheres - Part 0: Equipment - General requirements |
| IEC 60079-1 Edition 6 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures “d” |
| IEC 60079-2 Edition 5 | Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure «p» |
| IEC 60079-5 Edition 3 | Explosive atmospheres - Part 5: Equipment protection by powder filling «q» |
| IEC 60079-6 Edition 3 | Explosive atmospheres - Part 6: Equipment protection by oil immersion «o» |
| IEC 60079-7 Edition 4 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e" |

| | |
|---|---|
| IEC 60079-11 Edition 6 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i” |
| IEC 60079-13 Edition 1 | Explosive atmospheres - Part 13: Equipment protection by pressurized room 'p' |
| IEC 60079-15 Edition 4 | Explosive atmospheres – Part 15: Equipment protection by type of protection "n" |
| IEC 60079-18 Edition 3 | Explosive atmospheres – Part 18: Equipment protection by encapsulation “m” |
| IEC 60079-25 Edition 2 | Explosive atmospheres – Part 25: Intrinsically safe electrical systems |
| IEC 60079-26 Edition 2 | Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga |
| IEC 60079-30-1 Edition 1 | Explosive atmospheres – Part 30-1: Electrical resistance trace heating – General and testing requirements |
| IEC 60079-31 Edition 1 | Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t" |
| *IEC 61241-0 Edition 1 | Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements |
| IEC 61241-4 Edition 1 | Electrical apparatus for use in the presence of combustible dust - Part 4: Protection by pressurization "pD" |
| *IEC 61241-11 Edition 1 | Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD' |
| *IEC 61241-18 Edition 1 | Electrical apparatus for use in the presence of combustible dust - Part 18: Protection by encapsulation "mD" |
| *IEC 62086-1 | Electrical resistance trace heating – Part 1: General and testing requirements replaced by IEC 60079-30-1 (see above) |

NOTE 1 Standards shown with an asterisk (*) are superseded standards

NOTE 2 Unless otherwise indicated, earlier editions of standards (even if with a different number) are considered to be covered in the above scope for the purposes of the assessment.

NOTE 3 The above list highlights any extension of scope in the list above for new standards or later editions of standards already in scope.

### 1.6.2 ExTL scope

The ExTL scope can be seen in the table in the clause 1.6.1 above.

### 1.6.3 ExCB scope for Service Facilities Scheme

Not applicable.

### 1.6.4 ExCB scope for ExMark Scheme

Not applicable.

# 2 Common information

## 2.1 Legal entity of body

Suzhou Electric Appliance Science Research Institute Co., Ltd. is an independent legal entity registered in the business administration department of Jiangsu Province, the registration number is: 320512000064821 and the organization code: 60820259-1.

## 2.2 Financial support

Registered capital: RMB 720 million yuan

## 2.3 History

Suzhou Electrical Apparatus Science Academy Co., Ltd. was founded in 1965 and is mainly involved in testing, research, personnel training, standardization and testing equipment research and development of all kinds of power transmission and distribution equipment, high voltage electrical apparatus, high voltage switch assemblies, low voltage electrical apparatus, low voltage switch assemblies, machine tool electrical apparatus, marine electrical apparatus, nuclear power electrical apparatus, automotive electronic and electric apparatus, wind turbine generator, solar power photovoltaic system, energy conservation electrical apparatus, RoHS, EMC and Ex products, etc..
The institute passed the National Laboratory Accreditation and Metrology Accreditation by China National Accreditation Service for Conformity Assessment (CNAS) in 1998. The institute has established: National Centre for Quality Supervision and Testing of Electrical Apparatus, Machinery Industry Quality Supervision Testing Centre for Low & High Voltage Electrical Apparatus and Machine-tool Electrical Apparatus, Machinery Industry Quality Supervision Testing Centre for Automobile Electric & Electronic Products, Machinery Industry No.26 Metrology & Test Centre (Suzhou), Measurement certificate of Jiangsu Provincial Quality & Technology Supervision Testing Station for Small Capacity Electrical Apparatus Products.
The institute has become a CBTL within the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System) in 2012.
The Ex Laboratory has started the testing of explosion proof products in relationship to another Ex Testing Laboratory in 2007 and obtained the CNAS accreditation for the Ex-standards in 2014.

## 2.4 Documentation

### 2.4.1 Quality manual

The Management Manual, ref. GJJJ-B-2014, as a first level document, describes the management system of the institute according to the specifications of the quality policy and objectives, the integrity of the goals and commitments and the applicable management system requirements. (ISO9001 certificate valid until 2018-04-19)
Standards:
CNAS-CL01:2006 (ISO/IEC17025:2005）,ISO 9001:2008, IECEE 02, IECEx 01 and 02.
It came into effect on June 1, 2014.

### 2.4.2 Procedures

The Procedure Documentation, ref. CJJJ-001/2014~CJJJ-073/2014 and CJJJ-CMS-001/2014~CJJJ-CMS-007/2014 (including CJJJ-073/2014-00 ExTL accreditation application and system operating procedures), is a second level document. It specifies detailed procedures for the completion of the quality/technical activities and the requirements of the integrity of the operation. It details furthermore the procedures for the scope of application, responsibilities, work processes, reference documents, and how to control and record the activities.

### 2.4.3 Work instructions

The third level documents. Explosion proof related work instructions, 64 instructions in total, are the guides for Ex-testing activities. They not only provide guidance for the operation for personnel for the operation, but also provide the necessary testing and assessment criteria. All the relevant ExTAG decisions (in languages English and Chinese) and current editions of the IEC standards are covered by these instructions.

### 2.4.4 Records (including test records where relevant)

All records are appropriately maintained and stored. There is also an archiving process in place for older records. The system was found to meet the requirements of the IECEx. The basis for this can be found in the Management Manual section 4.13 and CJJJ-043/2014 Records Control Procedures, control of quality and technical records.

NOTE 1 Example records should be sought of oldest records both in electronic and hard copy to test the retrieval and existence of records, including archival records.

NOTE 2 Information should be sought on whether there is a method of secure disposal of hard copy records once they have been placed on an electronic system.

### 2.4.5 Document change control

Document change control is affected by having the master document as an electric version. Printed copies are clearly marked with a read stamp and carrying the related Revisions and Dates. The document exchange process to the Ex-staff is done by controlled and signed paper lists.
The basis for this can be found in the Management Manual Sect 4.3 and CJJJ-010/2014 “Editing, compiling, auditing, approving, amending procedure of testing/calibration reports/certificates” and C JJJ-011/2014 “Documents and data management procedure”.

## 2.5 Confidentiality

All employees and members of committees sign confidentiality agreements. Examples of these were sighted by the team and found to meet the requirements of the IECEx.
There is a system of control by security personnel at the main entrance gate and the entrances to the buildings.
The basis for this can be found in the document CJJJ-002/2014 “Internal secrecy and customers’ confidentiality and proprietary protecting procedure”, the Protection of internal documents, documents, technical information, patents and technical key secrets, and the protection of customer property, technical secrets.

### 2.6 Publications (Hard cover and Electronic)

"Electrotechnology" magazine, published in the field of electronic, electrical and mechanical products, equipment, systems, and complete sets of equipment and control equipment, computer application of scientific research, design, standards, testing and new technology, new industry, new materials and other technical papers and technical reports and technical exchanges.

### 2.7 Recognition and agreements

The laboratory is the CB laboratory of the IECEE System, and the contracted laboratory of the certification bodies CQM; CQC China Quality Certification Centre; PCCC Certification Centre; ROHS certification centre; China Classification Society; CESI Certification Centre; UL America; TUV Germany; BV France and Intertek UK.

### 2.8 Internal audit and periodic management review

The basis for this can be found in the Management Manual 4.14 section internal audit, 4.15 section management review, CJJJ-028/2014 “Internal audit/check control procedure” and CJJJ-030/2014 “Management appraisal/system evaluation control procedure“.
EETI carried out the internal audit in October 2015 according to the audit plan which covers all elements and two experimental sites.
In total five “Non Conformities” were raised and the laboratory had carried out a series of corrections. EETI carried out the Management review in January of 2015 and 14 improvements were put forward.

### 2.9 Contracting, subcontracting, use of other labs and use of other locations

The basis for this can be found in the Management Manual sections no. 4.4 and 4.5, CJJJ-040/2014 “Customer related process control and Requirement, tender book and contract evaluating procedure” and CJJJ-027/2014 “Subcontracting procedure of testing and calibration”. They include the requirements of the contract and subcontract in the field of ex-testing, including the requirement of the off-site and witness testing (OD024). Currently there are neither sub-contracting activities nor OD024 activities related to explosion protection.

### 2.10 Training and competence

The basis for this can be found in the Management Manual sections no. 5.2, CJJJ-003/2014 “Human resources control procedure”, timely and effective training of personnel. The training is being performed on an initial training basis as well as on a regular basis for each staff member.

### 2.11 Complaints and appeals (including appeals to IECEx)

The basis for this can be found in the Management Manual section 4.8 Complaints and appeal, CJJJ-021/2014 “Handling procedure of quality information feedback and complaints”, covering the requirements for complaints and appeals of the IECEx Scheme 02.

## 2.12 Special facts to be noted

### 2.12.1 Supporting documentation

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat. These are included in a site assessment report and include:

- Details of issues raised and how these have been resolved
- Checklist for ISO/IEC 17025
- Completed Technical Capability Document (TCD)
- Photos of the facilities/tests witnessed
- Assessors' notes
- Tests witnessed can be found in the table below:

| | |
|---|---|
| **Standard: IEC 60079-0: 2011 General Requirements:** | |
| **Clause 26.13** | **Surface resistance test (please select and prepare a suitable enclosure or a non-metallic material)** |
| **Clause 26.4.5** | **IP testing (please select and prepare an enclosure for IP 6X testing)** |
| **Clause 26.14** | **Measurement of capacitance (please select and prepare an unearthed metal part for group IIB, EPL Ga, Gb)** |
| | |
| **Standard: IEC 60079-1: 2014 Flameproof enclosures 'd'** | |
| **Clauses 15.2.2 / 15.2.3** | **Determination of explosion pressure (reference pressure) / Overpressure test (please select and prepare a sample for group IIB testing)** |
| **Clause 15.3** | **Test for non-transmission of an internal ignition (please select and prepare a sample for group IIB testing)** |
| | |
| **Standard: IEC 60079-7: 2015 Increased Safety 'e'** | |
| **Clause 6.3.4.1.1** | **Level of Protection "eb", rectification test (please select and prepare a test sample and perform this testing)** |
| | |
| **Standard: IEC 60079-11: 2011 Intrinsic Safety 'i'** | |
| **Clause 10.1** | **Spark ignition test (please prepare the STA for group IIC, Ga testing)** |
| **Clause 10.5.3** | **Temperature rise test on (high capacity) batteries (please select and prepare suitable batteries with high capacity)** |

| | |
|---|---|
| | |
| **Standard: IEC 60079-18: 2014 Encapsulation** | |
| **Clause 8.1.2** | **Dielectric strength (please select and prepare a suitable sample)** |
| | |
| **Standard: IEC 60079-30-1: 2015** | |
| **Clause 5.1.4** | **Flammability test (please select and prepare a trace heater and perform this test)** |
| | |
| **Standard: IEC 60079-31: 2013** | |
| **Clause 6.1.1.3** | **Pressure test (please select and prepare a suitable enclosure for "tb" testing)** |

### 2.13 Recommendations

Based on the assessment performed on 25th to 27th January 2016,
EETI is recommended for acceptance in the IECEx Scheme 02 as:

- An ExTL in the IECEx Certified Equipment Scheme with a scope as shown in clause 1.6 of this report.

This is according to the scope of the standards listed in this document.
The section "4.11 Comments" of this report is to be considered and fulfilled.

| | |
|---|---|
| Heinz Farke | Thierry Houeix |
| Lead Assessor | Expert Assessor |

Date: 06th July 2016

## 3 ExCB for IECEx Certified Equipment Scheme

Not applicable.
EETI is an associated ExTL to CQM / China.

## 4 ExTL for IECEx Certified Equipment Scheme

### 4.1 Assessment references

a) IECEx02 IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure

b) IECEx OD003-2 Assessment, surveillance assessment and re-assessment of ExCBs and ExTLs operating in the IECEx 02, IECEx Certified Equipment Scheme

c) IECEx OD009 Issuing of CoCs, ExTRs and QARs

d) ISO/IEC 17025:2005 Edition 2, General requirements for the competence of testing and calibration laboratories

e) IECEx Document OD17 Drawing and documentation guidance

f) IECEx Technical Capability Document (TCD)

g) ExTAG decision sheets (DSs)

NOTE The latest editions of the above documents were applied.

### 4.2 Candidate ExTL persons interviewed

| Name | Position |
|---|---|
| Tu Yingui | Director |
| Tao Jianxin | Team Leader/Project Engineer |
| Xu Jie | Project Engineer/ Test Engineer |
| Wang Wei | Test Engineer |
| Chen Wei | Test Engineer |

### 4.3 Associated ExCB(s)

EETI is an associated ExTL to the following ExCB:
China Quality Mark Certification Group Co., Ltd (Abbreviation: CQM)
No.33 Zengguang Road, Haidian District,
Beijing City, Postal Code:100048
People's Republic of China
For further details on CQM please refer to the IECEx website.

### 4.4 Organisation

#### 4.4.1 Names, titles and experience of the senior executives

| Name | Title | Experience |
|---|---|---|
| Hu Delin | President/ technical principal | 1978.7～1982.5, Suzhou machine tool electrical factory laboratory director, engaged in electrical product testing and quality management;<br>1982.5～1993.5, Suzhou machine tool electrical factory, deputy director, responsible for the production management, laboratory test management and other work;<br>1993.4～1995.2 Machine tool electrical products quality supervision and Testing Center (Suzhou), director of the center of the overall responsibility for the work;<br>1995.3～2000.1, Suzhou hi tech Industrial Development Zone, director of the electrical component testing, the overall responsibility for the work of the testing of the work;<br>2000.2～up to now, Suzhou Electrical Appliance Science Research Institute, president, National electrical product quality supervision and inspection center director, Industrial machinery, high and low voltage electrical appliances and machine tool electrical products quality supervision and testing center director, Machinery industry automotive electronic and electrical products quality supervision and testing center director, responsible for the work. |

### 4.4.2 Name, title and experience of the quality management representative

| Name | Title | Experience |
|---|---|---|
| Bao Xing | Quality principal | 1981.10～1982.10, Suzhou light industrial electroplating factory, Director of the Office;<br>1982.10～1986.10, Suzhou household electrical appliance No.2 factory, chief, section Chief;<br>1986.10～1998.10, Suzhou Electrical Apparatus Science Research Institute Co., Ltd. , Technical office director;<br>1998.10～up to now, Suzhou Electrical Apparatus Science Research Institute Co., Ltd. , Technical office director; |

### 4.4.3 Other employees in ExTL activity

| Name | Title/responsibility | Experience in Ex |
|---|---|---|
| Tu Yingui | Director | 35 years |
| Tao Jianxin | Team Leader/Project Engineer | 2 years |
| Xu Jie | Project Engineer/ Test Engineer | 3 years |
| Wang Wei | Test Engineer | 5 years |
| Gao Dongyue | Test Engineer | 4 years |
| Chen Wei | Test Engineer | 4 years |
| Ran Xuefeng | Test Engineer | 2 years |
| Liu Rong | Test Engineer | 4 years |
| Wang Yingdong | Test Engineer | 2 years |
| Wang Jintao | Test Engineer | 2 years |
| Dai Wei | Test Engineer | 2 years |
| Zhang Pengfei | Test Engineer | 2 years |
| Peng Zhonglin | Test Engineer | 2 years |
| Qiu Xiaodong | Test Engineer | 2 years |
| Tian Tian | Test Engineer | 2 years |
| Zhang Jian | Test Engineer | 4 years |
| Chen Renzhi | Test Engineer | 5 years |
| Shen Jingxi | Test Engineer | 3 years |
| Chen Li | Test Engineer | 7 years |
| Hu Shenshuo | Test Engineer | 4 years |
| Zhang Feng | Test Engineer | 3 years |
| Zhu Haihua | Test Engineer | 2 years |

## 4.5 Organizational structure

See Annex A, B

### 4.6 Resources

Suzhou Electrical Apparatus Science Research Institute Co., Ltd. (EETI) covers an area of 333000 square metre / test area: 250000 square metre / testing equipment 6100 pieces (sets) / total assets of 3.5 billion yuan. EETI has more than 40 professional laboratories, 1200 engineering and technical personnel (senior technical staff of 300, national experts 6, 7 doctors, 65 masters). The Ex-testing area of EETI is about 1700 square metres.

### 4.7 Test Reports Issued

Number of test reports (ExTRs) issued under for the preceding four years for each type of protection. **For new applications these should be for national or regional schemes** and for currently accepted bodies IECEx ExTRs should be shown (test reports for other schemes may also be shown):

| Standard numbers | Type of protection or other identifying information | Number of issued reports (ExTRs) (for last 4 years) | | | | |
|---|---|---|---|---|---|---|
| | | 2012 | 2013 | 2014 | 2015 | Total |
| IEC 60079-0 | General requirements | 1 | 1 | 11 | 6 | 19 |
| IEC 60079-1 | Flameproof enclosures “d” | 0 | 0 | 11 | 4 | 15 |
| IEC 60079-2 | Pressurized enclosure “p” | 0 | 0 | 0 | 1 | 1 |
| IEC 60079-5 | Powder filling “q” | 0 | 0 | 1 | 2 | 3 |
| IEC 60079-6 | Oil immersion “o” | 0 | 0 | 1 | 2 | 3 |
| IEC 60079-7 | Increased safety "e" | *2 | *2 | 4 | 3 | 11 |
| IEC 60079-11 | Intrinsic safety “i” | 0 | 0 | 4 | 1 | 5 |
| IEC 60079-13 | Pressurized room 'p' | 0 | 0 | 0 | 1 | 1 |
| IEC 60079-15 | Protection "n" | 0 | 0 | 0 | 1 | 1 |
| IEC 60079-18 | Encapsulation “m” | 0 | 0 | 1 | 2 | 3 |
| IEC 60079-25 | Intrinsically safe electrical systems | 0 | 0 | 0 | 0 | 0 |
| IEC 60079-26 | Equipment with equipment protection level (EPL) Ga | 0 | 0 | 0 | 0 | 0 |
| IEC 60079-30-1 | Electrical resistance trace heating | 0 | 0 | 1 | 2 | 3 |
| IEC 60079-31 | Enclosure "t" | 0 | 0 | 0 | 1 | 1 |
| IEC 61241-0 | General requirements | 0 | 0 | 1 | 1 | 2 |
| IEC 61241-4 | Pressurization "pD" | 0 | 0 | 0 | 1 | 1 |
| IEC 61241-11 | Intrinsic safety 'iD' | 0 | 0 | 0 | 1 | 1 |
| IEC 61241-18 | Encapsulation "mD" | 0 | 0 | 1 | 1 | 2 |
| IEC 62086-1 | Electrical resistance trace heating | 0 | 0 | 1 | 0 | 1 |

**NOTE** *** partial test reports considered**

### 4.8 National accreditation

EETI passed the National Laboratory Accreditation of China National Accreditation Service for Conformity Assessment (CNAS), registration number: L1020 CNAS.

### 4.9 Calibration

The majority of test equipment is sent out for calibration by an external calibration facility. Some calibration activities are done within the EETI institute, all calibrations can be traced back to the international system of units (SI). All test equipment examined had an indication of the calibration status. Original copies of the calibration certificates for all apparatus are stored at the facility in which the test equipment resides.
The calibration is done on the basis of IECEE document CTL-OP111.
[OP-PAC010-Ed.1.1], within 3 month, 6 month and 12 month periods.

### 4.10 Proficiency Testing

EETI has participated in different proficiency testing programs within the IECEE Scheme.

EETI has not participated so far in the Ex Proficiency Testing organised by PTB (IECEx Scheme 02). But EETI is going to participate and has already contacted PTB on 26th January 2016. (see website: https://www.ex-proficiency-testing.ptb.de/pts/general.html)

### 4.11 Comments (including mentioning of solved issues found during assessment)

#### 4.11.1 Scope of CNAS – 17025 Accreditation / Electrical

The National CNAS Accreditation according to 17025 covers the standards that are listed in Annex C of this report.
For those standards and therewith the related types of protection that are covered by that CNS 17025 accreditation the procedure according to OD003-2, Edition 2.0, 2015-01, clause 2.2 is applicable.

However, there are the following standards and therewith the related types of protection that were not covered by the CNAS 17025 accreditation while the assessment took place:

- IEC 60079-13; pressurized rooms “p” and
- IEC 60079-25; IS systems and
- IEC 60079-26; EPL Ga and

For these standards and related types of protection the clause 2.3 of OD003-2 is applicable that leads to an annual surveillance assessment.
As soon as CNAS has taken over these standards the surveillance procedure can set up to the 5 years re-assessment interval.

Remark and final conclusion, added on 2016-07-06:
These standards have already been added to the EETI scope by CNAS.
Therewith the 5 years re-assessment term is applicable.

### 4.11.2 Scope of CNAS – 17025 Accreditation / Mechanical

It is very positive to mention at this point that the current CNAS – 17025 scope of accreditation already covers the European standards for mechanical types of protection, which is the EN 13463 series.

### 4.11.3 Language within the IECEx-System

IECEx is an international system as it is IECEE as well. The language within these systems is English. This initial assessment bases on a mixture of documentation in English language (Management Manual,...) and many documents in Chinese language. The assessment of those documents were done by verbal translation and sampling.
For the future more and more QM-Documents need to be translated in English, even from lower levels (except of work instructions for the test engineers) into English or make it available in both languages Chinese / English.

### 4.11.4 Minor issues:

Some minor issues were found which were cleared to the satisfaction of the assessment team during the visit.

These included:

- Control of documentation
  The controlled document GJJJ-167 (showing the ExTL organisation chart) shall be included in the QM-documentation file during next revision.

- Evaluation Plan (Interface to 17065)
  Update of a controlled, template document in English/Chinese language called “Evaluation Plan / Test Plan”, which describes and details the required tests in relationship with EETI’s scope and with the associated ExCB.

- Uncertainty of measurement
  The OD012 is considered in the procedure CJJJ-073/2014-02. The “Uncertainty evaluation content” list, SBF-018 to SBF-133 is used therefore without mentioning OD012. Make sure that both documents are used combined to each other.

- Test sample identification
  The test samples need to be clearly and durable marked and identifiable.

- Development and Exchange of experiences, especially in “i” and “m”
  Further development and exchange of experiences is continuously required. (Initially there are some items to fulfil.)
  EETI is “mandatorily invited” to participate in the IECEx Proficiency Testing Scheme as well as in the IECEx Annual meetings of IECEx and in further standardization activities.

## 5 ExCB for Certified Service Facilities Scheme

Not applicable.

## 6 IECEx Conformity Mark Licensing System

Not applicable.

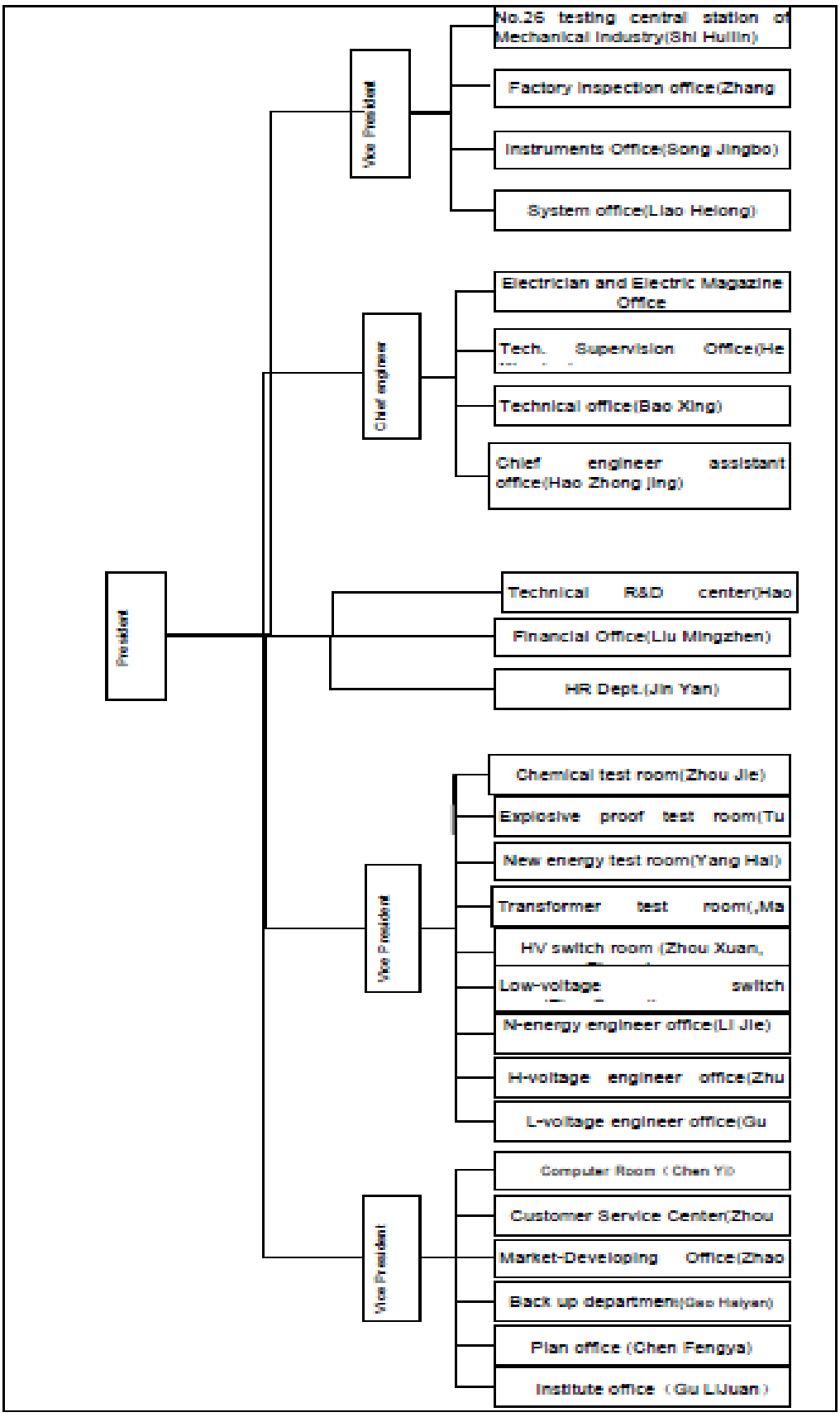
## 7 Annexes

See Contents. (add, modify or delete annexes as necessary). Please note the following instructions for the IEC template:

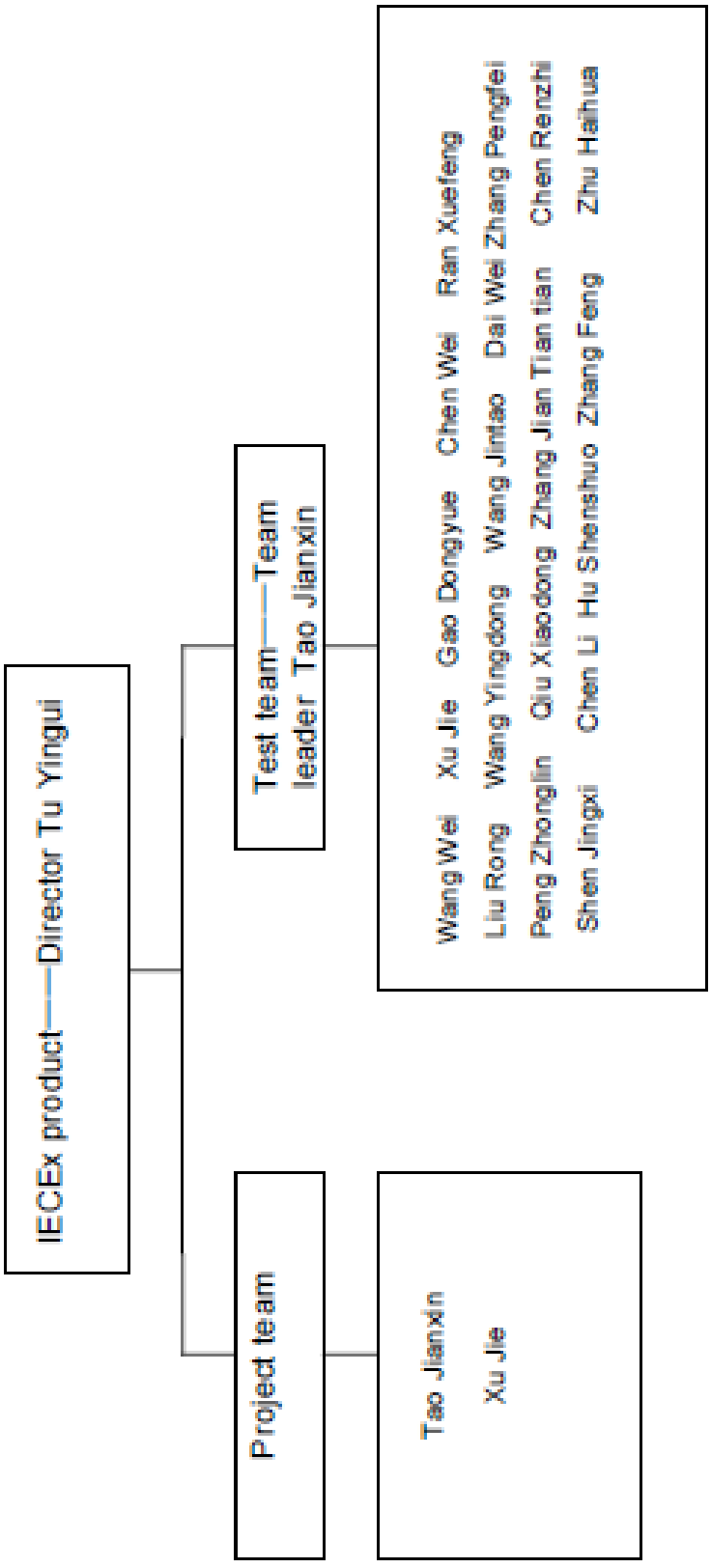
NOTE When creating a new annex **DO NOT** type the word Annex, just create a new empty page and then apply the styles ANNEX_title to the first (empty) line. The word "Annex" followed by the letter "A" or "B", etc will automatically appear.

**TIP:** When typing annex titles, separate the lines of the title by "shift+return"

Annex A
Overall Organisation Chart (taken from GJJJ-B-2014, Date: 2014-06-01)



Annex B
Organisation Chart of ExTL (see document GJJJ-167)



Annex C
Accreditation Certificate for Product Certification, 17025

China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L1020 )

Suzhou Electrical Apparatus Science Research Institute Co., Ltd.

No.5, Yuexi Qianzhu Road, Wuzhong District, Suzhou, Jiangsu, China

*is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence of testing and calibration.*

*The scope of accreditation is detailed in the attached appendices bearing the same registration number as above. The appendices form an integral part of this certificate.*

Date of Issue: 2014-12-23

Date of Expiry: 2017-12-22

Date of Initial Accreditation: 1998-11-09

Date of Update: 2014-12-23

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).

No.CNAS AL 2

0011866

Secretariat



To Annex C: Accreditation Certificate for Product Certification, 17025

| **IEC Standard Number** | **Title** | **CNAS 17025 accreditation Approved Scope of Nr.: L1020 (Date of issue: 2014-12-23) updated as shown below:** |
|---|---|---|
| IEC 60079-0 Edition 6 | General requirements | IEC 60079-0:2011 |
| IEC 60079-1 Edition 6 | Equipment protection by flameproof enclosures “d” | IEC 60079-1:2014 |
| IEC 60079-2 Edition 5 | Equipment protection by pressurized enclosure «p» | IEC 60079-2:2014 |
| IEC 60079-5 Edition 3 | Equipment protection by powder filling «q» | IEC 60079-5:2007 |
| IEC 60079-6 Edition 3 | Equipment protection by oil immersion «o» | IEC 60079-6:2007 |
| IEC 60079-7 Edition 4 | Equipment protection by increased safety "e" | IEC 60079-7:2006 |
| IEC 60079-11 Edition 6 | Equipment protection by intrinsic safety “i” | IEC 60079-11:2011 (ed6.0) |
| IEC 60079-13 Edition 1 | Equipment protection by pressurized room 'p' | IEC 60079-13: 2010 added on 2016-03-23 |
| IEC 60079-15 Edition 4 | Equipment protection by type of protection "n" | IEC 60079-15:2010 |
| IEC 60079-18 Edition 3 | Equipment protection by encapsulation “m” | IEC 60079-18:2009 |
| IEC 60079-25 Edition 2 | Intrinsically safe electrical systems | IEC 60079-25: 2010 added on 2016-03-23 |
| IEC 60079-26 Edition 2 | Equipment with equipment protection level (EPL) Ga | IEC 60079-26: 2014 added on 2016-03-23 |
| IEC 60079-30-1 Edition 1 | Electrical resistance trace heating – General and testing requirements | IEC 60079-30-1:2007 |
| IEC 60079-31 Edition 1 | Equipment dust ignition protection by enclosure "t" | IEC 60079-31 : 2013（ed2.0） |
| *IEC 61241-0 Edition 1 | General requirements | IEC 61241-0:2004 |
| IEC 61241-4 Edition 1 | Protection by pressurization "pD" | IEC 61241-4:2001 |
| *IEC 61241-11 Edition 1 | Protection by intrinsic safety 'iD' | IEC 61241-11:2005 |
| *IEC 61241-18 Edition 1 | Protection by encapsulation "mD" | IEC 61241-18:2004 |
| *IEC 62086-1 | General and testing requirements replaced by IEC 60079-30-1 (see above) | IEC 62086-1 : 2001 |

Secretariat

Annex D
ISO 9001 Certificate

华信技术检验有限公司

VOUCHING TECHNICAL INSPECTION LTD

# 质量管理体系认证证书

QMS CERTIFICATE OF REGISTRATION

我公司认定下列组织的质量管理体系
VTI Certifies herewith that

苏州电器科学研究院股份有限公司

**Suzhou Electrical Apparatus Science Research Institute Stock Co., Ltd.**

组织机构代码（60820259-1）

注册地址：苏州市吴中区越溪富强路5号；生产地址：苏州市吴中区越溪富强路5号，苏州新区浒关和街7号

Reg. address: No. 5 Qianzhu Rd., Yuesi, Wuzhong District, Suzhou, P.R. China; Produce address: No. 5 Qianzhu Rd., Yuesi, Wuzhong District, Suzhou, P.R. China, No. 7 Yonghe Street, Binhe Road, New District, Suzhou, P.R. China

邮政编码（ZIP）：215104

符合以下标准的要求，特发此证
demonstrated a Quality Management Systems
that complies with the requirements of

**GB/T19001-2008 idt ISO9001:2008**

管理体系认证范围：

Scope:

低压电器；整机保护设备；低压成套；机床电器；矿用、机车车辆电器；汽车电器元件及辅助装置；电力金具；核电及船用电器；化学物质；高压电器；变压器；互感器；电抗器；电容器；避雷器；绝缘子；信息电子；风力发电设备；太阳能光伏发电设备；照明电器；电机；防爆产品等的检测及电磁兼容试验、环境试验、材料试验、抗震试验、无损超声检测等，以及认可的测量仪器校准能力范围

Low-voltage electrical apparatus; whole-machine protective equipment; low-voltage assemblies; machine-tool electrical apparatus; mine, engine vehicle electrical apparatus; automobile electrical apparatus and auxiliary device; electric power fittings; nuclear power and ships electrical apparatus; chemical substances; high-voltage electrical apparatus; transformers, instrument transformers, reactors; capacitors, arresters, insulators; electronic information; wind turbine power generation equipment, solar power photovoltaic generation equipment; lighting; motor; anti-explosion products and EMC, environmental test, material test, anti-seismic test, Nondestructive test and accredited calibration capability scope of measuring equipments

| 注册号：<br>Registration No. | 04115Q10130R1M | 颁发日期：<br>Issue Date | 2015-4-20 | 有效终止日期：<br>Expiration Date | 2018-4-19 |
|---|---|---|---|---|---|

总经理（President）：

本证书信息可在国家认证认可监管管理委员会官方网站（www.cnca.gov.cn）上查询。
The certificate information can be inquired in the CNCA official website (www.cnca.gov.cn).

通讯地址：北京市海淀区中关村南大街2号数码大厦A座2306
2306, Floor 23, Building A, Cyber Tower, No.2, Zhong Guan Cun South Avenue, Haidian District, Beijing

邮编(Zip Code)：100086
www.vti-china.org

本证书有效性须由每年例行监督审核维持
The effectiveness of this certificate is maintained by annual regular surveillance audits.