



**IECRE OD-405-3**

Edition 2.0 2018-07-31

# **IECRE OPERATIONAL DOCUMENT**

**IEC System for Certification to Standards relating to Equipment for use in Renewable Energy applications (IECRE System)**

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**IECRE PV Certification Scheme –  
IECRE Quality System Requirements for PV Module Manufacturers –  
Part 3: Requirements for PV Factory Auditors**



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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
info@iec.ch  
www.iec.ch

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**IECRE PV Certification Scheme –  
IECRE Quality System Requirements for PV Module Manufacturers –  
Part 3: Requirements for PV Factory Auditors**

INTERNATIONAL  
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## CONTENTS

INTRODUCTION.....	3
1 Scope.....	4
1.1 General.....	4
2 Terms and definitions .....	4
2.1 PV Factory Auditor .....	4
2.2 PV Factory Auditor Trainee .....	4
2.3 PV Factory Auditor’s scope .....	5
3 Application, Qualifications, and registration of PV Factory Auditors.....	5
3.1 Certification Body responsibilities .....	5
3.2 Auditor application and qualification .....	5
4 Maintenance of auditor qualification .....	6
4.1 Retraining and written test.....	6
4.2 Review of auditor performance .....	6
5 Promotion or disqualification of auditors.....	6
6 Auditor certification renewal.....	6
7 Required documentation and confirmation for PV-OMC IECRE Factory Auditor .....	7
7.1 General information.....	7
7.2 Required documentation and confirmation for PV-OMC IECRE Factory Auditor.....	7
Annex A – PV Factory Auditor Qualifications Table.....	8
Annex B – PV Factory Audit Log (informative) .....	9
Annex C – PV Factory Auditor CPD Log (informative) .....	10

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**IECRE Operational Document 405-3 –****IECRE PV Certification Scheme –****IECRE Quality System Requirements for PV Module Manufacturers –  
Part 3: Requirements for PV Factory Auditors**

## INTRODUCTION

This Operational Document, OD 405-3 provides guidance on the qualification and requirements for various grades of Auditors assisting IECRE Certification Bodies to conduct audits of manufacturer's quality management systems in a uniform manner.

OD 405, *IECRE Quality System Requirements for PV Module Manufacturers*, has been published in three parts:

- *Part 1: Requirements for certification of a quality management system for PV module manufacturing*
- *Part 2: Audit Checklist*
- *Part 3: Requirements for PV Factory Auditors*

**This Document needs to be read in conjunction with ISO 9001 and IEC/TS 62941.**

**Document History**

Date	Summary
2016-09-26	Edition 1.0
2018-07-31	Edition 2.0

## IECRE Quality System Requirements for PV Module Manufacturers – Part 3: Requirements for PV Factory Auditors

### 1 Scope

#### 1.1 General

The IECRE System provides for the audit and surveillance of PV module manufacturer's Quality Management Systems in accordance with IEC/TS 62941 and OD405-2. The purpose of this document is to define requirements for various grades of PV Factory Auditors who conduct audits of PV module manufacturer's quality management systems. These requirements are designed to enable completion of these audits in a uniform manner.

An application form for the factory auditor is included.

#### Informative References

ISO 9001 *Quality Management System requirements* (latest edition)

ISO 19011 *Guidelines for auditing management systems* (latest edition)

ISO/IEC 17024 *Conformity assessment -- General requirements for bodies operating certification of persons* (latest edition)

ISO/IEC 17021 *Conformity assessment -- Requirements for bodies providing audit and certification of management systems -- Part 3: Competence requirements for auditing and certification of quality management systems* [Technical Specification].

### 2 Terms and definitions

#### Acronyms

OMC - Operational Management Committee

RECB - Renewable Energy Certification Body

IECRE MB - IECRE Member Body

#### 2.1 PV Factory Auditor

The PV Factory Auditor is responsible for carrying out initial certification audits of factories as well as routine surveillances (both pre-certification and post-certification) in accordance with the appropriate international standards, documented requirements, rules, guidelines, and procedures.

The PV Factory Auditor must successfully meet the requirements, which include, but are not limited to:

- Satisfy the IECRE MB qualification process defined in section 3.2.1 in order to be authorized as PV Factory Auditor.
- Meet the minimum qualification requirements as per section 3 of this document.
- Successfully pass the supervision and training as per section 4 of this document. The term **PV Factory Auditor**, used throughout this document, is applicable for an IECRE PV Factory Auditor registered by the IECRE secretariat only.

#### 2.2 PV Factory Auditor Trainee

The PV Factory Auditor Trainee is engaged in job specific training and is in the process of completion of the qualification process. The PV Factory Auditor Trainee is entitled to carry out an audit, whilst under supervision of a PV Factory Auditor or Lead auditor. Under such supervision, PV Factory Auditor Trainees are permitted to conduct initial certification audits as well as routine surveillances (both pre-certification and post-certification) in accordance with the appropriate international standards, documented requirements, rules, guidelines and procedures. See Annex A for details.

### **2.3 PV Factory Auditor's scope**

The PV Factory Auditor's Scope covers one or more IECRE categories within the Certification Body (RECB) scope (for example, IEC 61215 and IEC 61730).

## **3 Application, Qualifications, and registration of PV Factory Auditors**

Certification Bodies (RECBs) are nominated to participate in the IECRE System by one or more Member Bodies (IECRE MBs). Overall responsibility for qualification and registration of the PV Factory Auditors and Trainees rests with the RECB.

### **3.1 Certification Body responsibilities**

The Certification Body must be a participating member (RECB) of the IECRE system. The RECB is responsible for defining and maintaining its Quality Management System, including the responsibilities for providing training and authorization for the applicable certification and surveillance scope. This includes but is not limited to:

- 1) Identification of training needs. Periodic review of the training needs and propose updated information
- 2) Identification of training contents, e.g. special knowledge, test or surveillance needs according to the supported IECRE categories.
- 3) Training procedures.
- 4) Authorization procedures including authorization if deviations from the requirements are applied.
- 5) Establishing, maintaining and documenting of training and authorization files ("competence matrix").

### **3.2 Auditor application and qualification**

The application shall be submitted to the RECB accompanied by the documentation as far as applicable. The RECB shall endorse the candidate based upon review of the credentials and past experience.

#### **3.2.1 Documentation of completion of qualification requirements for auditors**

The requirements identified in Annex A apply to all grades of PV Factory Auditors. Evidence of audit experience shall be verified by the audited client (e.g. by authorized signature on the audit report or supporting letter), and shall include confirmation of the audit duration, audit objective, and role played in the audit (e.g. principal auditor, lead auditor or audit team member).

NOTE: Time required for follow-up on corrective actions related to audit findings should not be counted toward the "Auditing experience".

In addition, voluntary collaborations with international PV committees will be taken into consideration as eligible experience. Evidence of this collaboration shall be provided and assessed by the corresponding RECB.

#### **3.2.2 Initial training of PV Factory Auditors**

Each applicant shall provide evidence of passing a written qualification exam covering the following content:

- a) ISO/IEC 17024 and 17021 (relevant clauses) e.g.:
  - Technical Requirements
  - Quality System
  - Personnel
- b) Inspection Methods and Procedures e.g.:
  - Product review according to product certification documents
  - Handling Inspection Samples
  - Records

– Inspection Reports and Inspection Certificates.

- c) Surveillance procedures according to the relevant requirements of the applied scheme.
- d) Decisions or other additional requirements of the applied scheme
- e) Requirements for surveillance sample testing and test results evaluation as needed during the performance of PV Factory Auditor in the applicable product categories.
- f) Familiarity with the IEC 61215 series, the IEC 61730 series, and all other standards listed in normative references of IEC 62941.

### **3.2.3 Other supporting skills**

Each applicant shall provide written evidence, if applicable, for any of the following:

- g) Computer skills relevant to filling in surveillance reports and e-mail communication.
- h) Communication in English and appropriate regional language widely used in the client location.
- i) Other professional competency, for example, as shown in ISO 19011 (section 7.2.3).

## **4 Maintenance of auditor qualification**

The RECB is responsible to carry out annual training and supervision programs that cover but are not limited to:

### **4.1 Retraining and written test**

The written test shall cover content of section 3.2.2.a) through f).

Training updates from the latest changes to IEC and IECRE documents.

### **4.2 Review of auditor performance**

The RECB shall review auditors' performance regularly based upon:

- a) Audit reports on a sampling basis by the certification body technical manager.
- b) Feedback from manufacturers (audit clients)
- c) Feedback from other certification bodies (for contract auditors).
- d) Feedback from Team lead auditor (where applicable)

The review cycle shall be conducted annually

Performance related improvement is addressed through additional training, closer supervision and mentoring by experienced auditors as decided by the RECB.

NOTE: Validation of the CB/IB's management of auditors is part of the Peer Assessment process.

## **5 Promotion or disqualification of auditors**

The RECB can nominate promotion of the PV Factory Auditors from auditor trainee based on review of the auditor performance in section 4.2. Auditors shall be disqualified if there is a continued poor performance or unacceptable behaviour – violation of auditor ethics, unprofessional conduct. Auditor responsibilities

PV Factory auditors are responsible to maintaining and upgrading their auditor grades by keeping their auditor qualifications and audit experience updated in an audit log as shown in Annex B.

## **6 Auditor certification renewal**

Auditors shall accumulate the audit experience and submit every 3 years for renewal to the RECB for continuation of the grades or to request of upgraded status. Proof of continual professional development (CPD) totalling 45 hours should be submitted as an additional evidence during the 3 year renewal. This 45 hours may be accumulated at any point during the 3 year cycle. This CPD can be acquired through attending formal training on Quality

Management systems, technical training relevant to PV Solar systems, attending PV solar conference, seminar, volunteering for PV Solar standards development, etc.

Other training that are permitted to be considered as an evidence for CPD are: Soft skills training (e.g. communication skills, conflict resolution and negotiation, personal effectiveness, creative problem solving, strategic thinking, management/business training, team building, influencing skills and other related training.

## 7 Required documentation and confirmation for PV-OMC IECRE Factory Auditor

### 7.1 General information

The following application shall be completed by the candidate Factory Auditor and shall be submitted to the RECB for determination of acceptance.

NOTE: Incomplete applications will not be processed until full documentation has been received.

Applicant shall provide the information in the table below:

Name:	Click here to enter text.
Address:	Click here to enter text.
E-mail:	Click here to enter text.
Tel.:	Click here to enter text.

### 7.2 Required documentation and confirmation for PV-OMC IECRE Factory Auditor

Application criteria	Documentation / Confirmation provided
1. Educational background	Indication of degree or certification.
2. General Work Experience	Listing of relevant work experience
3. Solar PV specific work experience	Listing of relevant solar work experience
4. Auditor training	Listing of training classes attended as per Annex C
5. Auditing experience	Listing of audit experience with customer signatures as per Annex B

### Annex A – PV Factory Auditor Qualifications Table

Auditor Grade	Educational Background	General Work Experience	Solar PV specific work experience*	Auditor Training	Auditing Experience
Auditor Trainee	Either a University degree / College diploma in the relevant discipline (e.g. Electrotechnical, mechanical, chemical, etc.) or certified / licensed master craftsman, technician or engineer in the relevant technical working field.	4 Years, or equivalent	2 Years, or equivalent	Attended a lead assessor/auditor training on ISO 9001 approved by a accreditation board from IAF  Or,  Attended auditor training or a training on IEC 62941 requirements interpretation	None
Auditor	Same as above	4 Years, or equivalent	2 Years, or equivalent	Same as above	4 Full Management Systems audit, all elements of audit cycle, 20 days of which 15 on site

- \*Manufacturing or downstream PV module experience acceptable.
- PV Module manufacturing experience preferable.
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NOTE: IAF (International Accreditation Forum) <http://iaf.nu/>

## Annex B – PV Factory Audit Log (informative)

Audit Number	1	2	3	Etc.
<b>Dates</b> (DD/MM/YY)  <b>STATE:</b> Start and finish dates of the audit on site				
<b>Total Duration of Audit in days</b>  <b>STATE:</b> Number of days of <b>your</b> involvement (including off-site time)				
<b>Audit Days spent on site</b>  <b>STATE:</b> Duration of <b>your</b> on-site days				
<b>Contact details of the company audited (auditee)</b>  <b>PROVIDE:</b> Auditee contact name Complete address Telephone/fax number: E-mail address				
<b>Role in audit</b>				
<b>Total Number in Audit Team (including yourself)</b>				
<b>Audit standard (e.g. ISO 9001:2015)</b>  <b>STATE:</b> Full Reference including date of standard				
<b>Type of audit</b> (Surveillance; Second party; Third party)				
<b>Contact details of the company that employed you</b>  <b>PROVIDE:</b> Company name Complete address Contact Name Position within Organization Contact telephone number Email address				
<b>Declaration of competence</b> <i>(This person declares that the audit was conducted adequately and professionally and that the presented information is accurate)</i>  <b>PROVIDE:</b> Name Position Auditor certification number: (if applicable) Contact telephone / fax number Email address				
<b>Signature</b>				

**Annex C – PV Factory Auditor CPD Log (informative)**

Item	1	2	3	Etc.
<p><b>Dates</b> (DD/MM/YY)</p> <p>STATE: Start and finish dates of the training</p>				
<p><b>Professional development hours</b></p> <p>STATE: Every day of training and conference accounts for 8 hours</p>				
<p><b>Training origination OR Volunteering organization</b></p> <p>PROVIDE: Training attendance sheet, conference badge, or letter from volunteering organizations signed by the chair of the interest group.</p>				

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RENEWABLE  
COMMISSION

3, rue de Varembé  
PO Box 131  
CH-1211 Geneva 20  
Switzerland

Tel: + 41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

IEC SYSTEM FOR CERTIFICATION TO STANDARDS  
RELATING TO EQUIPMENT FOR USE IN  
ENERGY APPLICATIONS (IECRE SYSTEM)

IECRE Secretariat c/o IEC  
3, rue de Varembé  
PO Box 131  
CH-1211 Geneva 20  
Switzerland

Tel: + 41 22 919 02 11  
[secretariat@iecre.org](mailto:secretariat@iecre.org)  
[www.iecre.org](http://www.iecre.org)