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# 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 Quality System Requirements for PV Plant Installation and Maintenance – Part 3: Requirements for PV Plant 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 OPERATIONAL DOCUMENT**

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

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**IECRE Quality System Requirements for PV Plant Installation and Maintenance –  
Part 3: Requirements for Auditors of PV Service Providers**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**IECRE Operational Document 410-3****IECRE PV Certification Scheme –****IECRE Quality System Requirements for PV Plant Installation and Maintenance – Part  
3: Requirements for Auditors of PV Service Providers**

## INTRODUCTION

This Operational Document, OD 410-3 provides guidance on the qualification and requirements for various grades of Auditors assisting IECRE Certification Bodies to conduct audits of PV Service Providers' quality management systems in a uniform manner.

OD 410, *IECRE Quality System Requirements for PV Installation and Maintenance*, has been published in three parts:

- *Part 1: Requirements for certification of a quality management system for PV plant installation and maintenance*
- *Part 2: Audit Checklist*
- *Part 3: Requirements for Auditors of PV Service Providers*

This Document needs to be read in conjunction with IEC/TS 63049.

**Document History**

Date	Summary
2018-05-01	PV-OMC/163/RV

## IECRE Quality System Requirements for PV Plant Installation and Maintenance – Part 3: Requirements for Auditors of PV Service Providers

### 1 Scope

#### 1.1 General

The IECRE System provides for the audit and surveillance of PV plant installation and maintenance Quality Management Systems in accordance with IEC/TS 63049. Here, we use the term “PV Service Provider” to refer to organizations that install PV plants or provide operations and maintenance for PV plants. The purpose of this document is to define requirements for various grades of auditors who conduct audits of PV service providers’ quality management systems. These requirements are designed to enable completion of these audits in a uniform manner.

An application form for the plant auditor is included.

#### References

IEC/TS 63049 *Terrestrial photovoltaic (PV) systems – Guideline for effective quality assurance in PV system installation and operations and maintenance*

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

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

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

ISO 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 - Renewable Energy Member Body

#### 2.1 PV-Service-Provider Auditor

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

Note: Roles and responsibilities of PV Factory Auditors are defined in iecre04.Ed.2.0, while they are called PV Plant Auditors in this document.

Typically the PV-Service-Provider Auditor is part of an audit team under a lead auditor.

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

- Satisfy the REMB qualification process defined in section 3.2 in order to be authorized as PV-Service-Provider 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. <sup>[SEP]</sup>The term **PV-Service-Provider Auditor**, used throughout this document, is applicable for an IECRE PV-Service-Provider Auditor registered by the IECRE secretariat only.

## **2.2 PV-Service-Provider Auditor Trainee**

The PV-Service-Provider Auditor Trainee is engaged in job specific training and is in the process of completion of the qualification process. The PV-Service-Provider Auditor Trainee is entitled to carry out an audit, whilst under supervision of a PV-Service-Provider Auditor or Lead auditor. Under such supervision, PV-Service-Provider 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 Lead Auditor**

The PV-Service-Provider Lead Auditor is primarily responsible for leading a team of qualified and auditor trainee for conducting 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. Lead Auditors also serve as the single point of contact with a client for communications related to the audit. Other general responsibilities for lead auditors are obtained from ISO 19011. See Annex A for details.

## **2.4 Principal Auditor**

The PV-Service-Provider Principal Auditor is primarily responsible for conducting the initial certification audit 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 Principal auditor is permitted to conduct an audit as a sole auditor. Other general responsibilities for principal auditor are same as Lead auditor from ISO 19011. Principal auditor is the highest audit grade obtained through experience as outlined in Annex A.

## **2.5 PV-Service-Provider Auditor's scope**

The PV-Service-Provider Auditor's Scope covers one or both elements of IEC 63049, depending on whether the expertise includes "installation", "operations and maintenance", or both.

# **3 Qualifications, authorization and registration of PV-Service-Provider 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 various grades of the PV-Service-Provider Auditors rests with the RECB. Each RECB must participate in the peer assessment process to assure consistency and mutual recognition, and must also fulfil the requirements of 3.1.

## **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 nominated by the responsible MB (or its designated representative RECB), and submitted to IECRE Secretariat, accompanied by the documentation as far as applicable. The MB (or its designated representative RECB) shall endorse the candidate based upon 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-Service-Provider 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-Service-Provider 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-Service-Provider Auditor in the applicable product categories.
- f) Familiarity with the standards listed in normative references of IEC 63049, as appropriate.

#### **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).

### 3.3 Registration of PV-Service-Provider Auditors

The following information shall be provided to the IECRE secretariat for registration of a PV-Service-Provider Auditor:

- Name of the PV-Service-Provider Auditor to be registered.
- Name of the IECREMB and RECB.
- Statement that the minimum qualification requirements are fulfilled as per section 3.
- PV-Service-Provider Auditor's allowed inspection and audit categories.
- Date of application. 

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- Date of auditor certification approval date, registration #
- Date of auditor certification expiry date.

The registration will be published on the IECRE web site.

## 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 should be conducted annually

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

## 5 Promotion or disqualification of auditors

The RECB can nominate promotion of the PV-Service-Provider Auditors from one grade to another (i.e. auditor trainee to auditor, auditor to lead auditor, lead auditor to Principal auditor) 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. The IECRE secretariat shall be informed through IECRE MB (or its designated representative RECB) of all promotions and disqualifications to maintain current records.

## 6 Auditor responsibilities

PV-Service-Provider auditors are responsible for maintaining and upgrading their auditor grades by keeping their auditor qualifications and audit experience updated in an audit log as provided in Annex B.

## 7 Auditor certification renewal

Auditors shall accumulate the audit experience and submit every 3 years for renewal to RECB for continuation of the grades or to request 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.

The CPD log should be maintained in the format provided in Annex C.

## 8 Required documentation and confirmation for PV-OMC IECRE PV-Service-Provider auditor

### 8.1 General information

Please provide the information requested in items 8.2 and 8.3 (as applicable) below.

The following application shall be completed by the candidate PV-Service-Provider auditor and shall be submitted by the associated RECB to the Member Body The Member Body shall review the application and determine its acceptance prior to nomination to the IECRE Secretariat.

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

Applicant RECB 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.

### 8.2 Required documentation and confirmation for PV-OMC IECRE PV-Service-Provider 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-Service-Provider Auditor Qualifications Table**

Auditor Grade	Educational Background	General Work Experience	Solar PV specific work experience*	Auditor Training	Auditing Experience
Provisional Auditor	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 body from IAF  Or,  Attended auditor training or a training on IEC 62941 or IEC63049 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
Lead Auditor	Same as above	4 Years, or equivalent	2 Years, Direct experience with IEC 62941 or IEC63049 or similar is preferred as it becomes available	Same as above	Auditor level auditing experience PLUS 3 full management system audit as leader of the audit team, 15 days of which 10 onsite.
Principal Auditor	Same as above	8 Years, or equivalent	4 Years, Direct experience with IEC 62941 or IEC63049 or similar is preferred as it becomes available	Same as above	6 Years as a Lead Auditor

\*Manufacturing or downstream PV module experience acceptable. PV Module manufacturing experience preferable.

NOTE: IAF (International Accreditation Forum) <http://iaf.nu/>

**Annex B – PV-Service-Provider Audit Log**

Audit Number	1	2	3	Etc.
<p><b>Dates</b> <i>(DD/MM/YY)</i></p> <p><b>STATE:</b> Start and finish dates of the audit on site</p>				
<p><b>Total Duration of Audit in days</b></p> <p><b>STATE:</b> Number of days of <b>your</b> involvement (including off-site time)</p>				
<p><b>Audit Days spent on site</b></p> <p><b>STATE:</b> Duration of <b>your</b> on-site days</p>				
<p><b>Contact details of the company audited (auditee)</b></p> <p><b>PROVIDE:</b> Auditee contact name Complete address Telephone/fax number: E-mail address</p>				
<p><b>Role in audit</b></p>				
<p><b>Total Number in Audit Team (including yourself)</b></p>				
<p><b>Audit standard</b> <i>(e.g. ISO 9001:2015)</i></p> <p><b>STATE:</b> Full Reference including date of standard</p>				
<p><b>Type of audit</b> <i>(Surveillance; Second party; Third party)</i></p>				

Audit Number	1	2	3	Etc.
<p><b>Contact details of the company that employed you</b></p> <p><b>PROVIDE:</b></p> <p>Company name</p> <p>Complete address</p> <p>Contact Name</p> <p>Position within Organization</p> <p>Contact telephone number</p> <p>Email address</p>				
<p><b>Declaration of competence</b></p> <p><i>(This person declares that the audit was conducted adequately and professionally and that the presented information is accurate)</i></p> <p><b>PROVIDE:</b></p> <p>Name</p> <p>Position</p> <p>Auditor certification number: (if applicable)</p> <p>Contact telephone / fax number</p> <p>Email address</p>				

**Annex C – PV-Service-Provider Auditor CPD Log**

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

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IEC SYSTEM FOR CERTIFICATION TO STANDARDS

RELATING TO EQUIPMENT FOR USE IN RENEWABLE

ENERGY APPLICATIONS (IECRE SYSTEM)

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)

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)