



**IECRE OD-410-1**

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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 1: Requirements for certification**



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**IECRE Quality System Requirements for PV Plant Installation and Maintenance – Part 1: Requirements for certification**

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## IECRE Quality System Requirements for PV Plant Installation and Maintenance – Part 1: Requirements for certification

### INTRODUCTION

This Operational Document, OD 410-1, sets out the IECRE System requirements for installer's and operations and maintenance (O&M) providers' quality systems, relating to the installation and O&M of PV systems.

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

- *Part 1: Requirements for certification*
- *Part 2: Audit Checklist*
- *Part 3: Requirements for PV Plant Auditors*

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

The purpose of this Document is to embrace the good practices that are appropriate to PV systems.

#### Document History

Date	Summary
2018-05-01	PV-OMC/162/RV

## 1 Scope

### 1.1 General

This Document specifies particular requirements and guidance on the establishment and maintenance of a quality system (not the individual implementations – the audit is of the organization, not of each site) to meet the requirements of the IECRE Scheme. It does not preclude the use of other quality systems that are compatible with the objectives of ISO 9001 subject to the acceptance of an RECB. Therefore, when RECBs assess the quality systems of installers and Operations and Maintenance (O&M) providers, this document shall be the basis of the initial assessment and subsequent surveillance visits. An application form for the RECB is included in Clause 6.

### 1.2 Permissible exclusions

The installer or O&M provider may only exclude quality management system requirements within Clause 4, with the agreement of the RECB, provided that conformity of the end result can still be demonstrated.

## 2 Normative references

This Document incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Document only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

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

ISO/IEC 17021 Conformity assessment-Requirements for bodies providing audit and certification of management systems

ISO 9001 Quality management system – requirements

IAF MD1:2007 IAF Mandatory Document for the Certification of Multiple Sites Based on Sampling

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in the International Electrotechnical Commission Glossary (<http://std.iec.ch/glossary>) and the following apply.

### 3.1 Certification body (RECB)

Organization that conducts conformity assessments and issues Certificate of Conformity (CoC) to PV systems. See 2.5 of ISO 17000.

### 3.2 Site of client

Example locations of where the client's current or previous work may be viewed as well as any office (physical or virtual) area that is used for retaining records.

## 4 Quality assurance system requirements

### 4.1 General requirements

4.1.1 Refer to IEC/TS 63049 for applicable requirements to be covered in the audit.

4.1.2 Refer to OD 410-3 for Requirements for PV Plant Inspectors.

### 4.2 Audit Process

4.2.1 The audit process shall encompass audit planning, audit execution, reporting, surveillance and maintenance of the certification. The process shall include handling complaints and feedback regarding the audit process.

4.2.2 The Certification Body shall ensure that:

- i) Only competent audit team members that meet qualification and experience requirements are assigned to audits.
- ii) Audit plans cover all areas and activities applicable to the standard/ specification covered by the scope of the audit.
- iii) The audit shall be managed by a team leader, competent in at least one of the audited standards/specifications.
- iv) Sufficient time is allocated to accomplish a complete and effective audit of the organization's management system covered by the scope of the audit and as estimated in section 4.3.2.

4.2.3 Audit reports shall be prepared and documented in a manner as specified in PV-OMC OD-408-3. Each finding raised in a report shall be traceable to the applicable standard(s)/specification(s).

NOTE: The typical process flow for the audit and certification process is outlined in figure E.1 of ISO/IEC 17021:2015.

### 4.3 Audit Sampling and Audit time

4.3.1 Audit Sampling: If an organization has multiple operating teams in different geographic locations, the initial certification audit shall be required for all the operating teams. If eligible as per section 3 of IAF MD1:20017, Surveillance and Recertification audits should be sampled based on the formula provided in section 5.2.3 of IAF MD 1:2007. For organizations executing installations, the inspected sites should be sampled from current construction projects. For organizations providing O&M services, the sites should be sampled from those that have ongoing service contracts. Selection criteria should also take into consideration guidelines provided in section 5.1.4 of IAF MD1:2007.

#### 4.3.2 Audit time

4.3.2.1 To determine the audit time, the Certification Body shall:

- a) Calculate the required audit time by the relevant application documents and/or scheme rules for each standard. It is important to include all headcount (full time, part time, contract from all shifts in the audit person days headcount calculation).
- b) Calculate the starting point "T" for the duration of the audit.
- c) Adjust the starting point figure by taking into account factors that may increase or reduce the time required for the audit.

The factors for reduction shall include but are not limited to:

- i) Design responsibility of the organization
  - ii) Extent of manual processes
  - iii) The complexity of the audit
  - iv) Maturity of the management systems (consideration for surveillance)
- d) Inform the client that the duration of the audit based on the declared level of the organization's management system may be subject to adjustment on the basis of confirming the level of complexity at stage one and subsequent audits.

**4.3.2.2** Adjustment of the audit time shall not exceed 20% from the starting point “T”, unless there is specific documented agreement between the client and the CB.

**4.3.2.3** The starting point figure and justification for increase or reduction shall be documented.

NOTE: The Advanced Surveillance and Recertification Procedures (ASRP) as per IAF MD3:2008 may place greater (but not total) reliance on the organization's internal audit and management review processes.

#### **4.4 Auditor selection**

**4.4.1** Please refer to the Operational document (OD 410-3) on PV Inspector and Factory auditor qualification and certification requirements. Additional information is available from ISO/IEC 17021 Part 3: Competence requirements for auditing and certification of quality management systems [Technical Specification].

#### **4.5 Stages of audit**

**4.5.1** Stage 1 is required for the initial certification and significant scope extension to the existing certification. (e.g., Addition of new installation technology). Stage 1 is not required for adding new operating teams or new installations as long as the management systems from the existing registered certification are applied.

**4.5.1.1** Stage1 (initial audit): Some of the objectives are

- a) review the client's management system documented information;
- b) determine the preparedness for *stage 2*;
- c) obtain necessary information regarding the scope of the management system, including:
  - the organizational structure
  - processes and equipment used;
  - levels of controls established (particularly in case of multiteam clients);
  - applicable statutory and regulatory requirements;

**4.5.1.2** Evaluate if the internal audits and management reviews are being planned and performed, and that the level of implementation of the management system substantiates that the client is ready for stage 2.

**4.5.1.3** The stage 1 audit may take place at the site(s) of operation of the client (including both operations at PV plant sites and any (physical or virtual office) site that is used for storage of records, etc. CB shall decide if this can be effectively carried out as a desk audit or a remote audit. It is anticipated that the audit will include visiting multiple PV plants that are examples of current or past work of the client in addition to visiting the office site that is used for storage of records after work at a PV plant has been completed.

**4.5.2** Stage 2 (surveillance audit):

The purpose of stage 2 is to evaluate the implementation, including effectiveness, of the client's management system.

**4.5.2.1** In determining the interval between stage 1 and stage 2, consideration shall be given to the needs of the client to resolve areas of concern identified during stage 1. The client shall be informed that the results of stage 1 may lead to postponement or cancellation of the certification process. The stage 2 shall take place at the site(s) of the client including PV plants that provide evidence of current or past work as well as any locations in which records are stored. See additional details in ISO/IEC 17021:2015 sections 9.3.1.2 and 9.3.1.3.

## **5 Pass/Fail criteria of IEC TS 63049**

**5.1** The client organization shall demonstrate their ability to consistently provide product and services that meet customer and applicable statutory and regulatory requirements, and shall incorporate requirements for the continual improvement of the effectiveness of the QMS. (See ISO 9001:2015 section 1).

**5.2** The following Pass/Fail criteria shall be applied in the audit.

- i) No major nonconformity shall be found in the audit. Certification shall not be issued until satisfactory corrective action response and an onsite follow up verification by the audit team.



ii) If any minor nonconformity is found, as defined in ISO/IEC 17021 clause 9.1.15 (c), certification shall not be issued until satisfactory correction of the situation, and its desktop verification, corrective action response by the lead auditor. Corrective action shall be verified in the subsequent surveillance audit.

NOTE: Major and minor nonconformance are defined below; originally taken from ISO/IEC 17021:2015.

### **Major nonconformity**

*nonconformity* that affects the capability of the management system to achieve the intended results

NOTE 1 to entry: Nonconformities could be classified as major in the following circumstances:

- if there is a significant doubt that effective process control is in place, or that products or services will meet specified requirements;
- a number of minor nonconformities associated with the same requirement or issue could demonstrate a systemic failure and thus constitute a major nonconformity.

### **Minor nonconformity**

*nonconformity* that does not affect the capability of the management system to achieve the intended results.

## **6 Expiration of the certificate, Surveillance Audit, and Re-Audit.**

### **6.1 Expiration of the certificate**

The certificate expires in three year after its issuance date. Surveillance audit is mandatory to maintain effectiveness of the certificate within this period.

### **6.2 Surveillance Audits**

Surveillance Audits must be conducted at least annually, and no later than 12 months after the previous Audit. Surveillance Audits shall cover aspects of the organization's quality management system at the discretion of the nominated auditor. A report shall be produced identifying any areas requiring Corrective Actions.

The RECB in charge of the assessment and the certification, can extend above mentioned 12 months period up to 18 months based on the results of the assessment. In such a case, RECB shall notify its decision to the Executive Secretary for approval.

### **6.3 Re-Audits**

Organizations shall be subject to a Re-Audit at the end of every three-year certification cycle. A Re-Audit shall be required prior to the expiry date of the organization's existing certificate, in accordance with RECB requirements. Three-months prior to the Re-Audit due date a new proposal and contract shall be created, covering the next three year cycle.

Failure to submit for a Re-Audit prior to the expiry date of the existing certificate shall result in a period during which the organization's certification shall be deemed to have expired and therefore continuous certification cannot be shown on subsequent certificates.

## **7 General information**

Please provide the information requested in table (as applicable) below.

The following application shall be completed by the candidate RECB and shall be submitted by the Member Body in which the candidate RECB resides. The Member Body shall ensure that the application package, as noted below, is complete.

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

NOTE: Once this application is accepted and approved by the Secretariat, it shall be noted that additional documentation will be required to establish the assessment team and to facilitate the assessment, e.g. test reports, results of proficiency testing, accreditation reports, internal quality management documentation, etc.

Applicant RECB shall provide the information in the table below:

Legal Entity Name:	
Address:	
Contact person:	
E-mail:	
Tel.:	
Website:	
Type of application:	PV plant installation or O&M provider

**Bibliography**

IEC 62446-1 *Grid connected photovoltaic (PV) systems – Part 1: Minimum requirements for system documentation, commissioning tests and inspection*

IEC/TS 62446-2 *Grid connected photovoltaic (PV) systems – Part 2: Maintenance of PV systems*

IEC 62548 *Photovoltaic (PV) arrays – Design requirements*

and/or IEC/TS 62738 *Design guidelines and recommendations for photovoltaic power plants*

IECRE 01 *System Basic Rules*

IECRE 02 *System Rules of Procedure*

IECRE 04 *PV-OMC Rules of Procedure*

ISO/IEC 17020 *Conformity assessment – Requirements for the operation of various types of bodies performing inspection*

ISO/IEC 17025 *General Requirements for the Competence of Testing and Calibration Laboratories*

ISO/IEC 17065 *Conformity assessment – Requirements for bodies certifying products, processes and services*

IAF MD5:2015 DETERMINATION OF AUDIT TIME OF QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEMS

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