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IECEX Personnel Certification Scheme [CoPC]

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# Program

What is Competence?

Elements of Competence

Units of Competence

How is a person 'declared competent'?

Application for Competence & evaluation

Different Competence systems.

IECEX Personnel Competence Scheme.

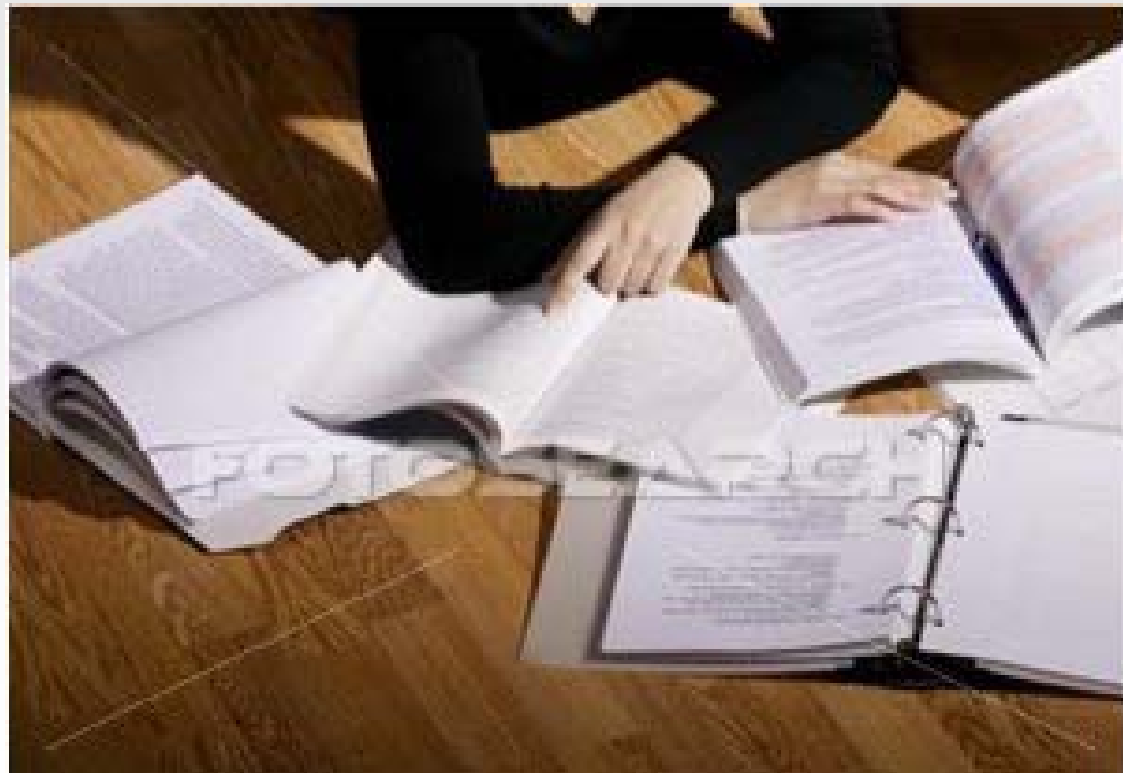
# What is Competence?

The concept of competence focuses on what is expected of an employee in the workplace rather than the learning process.

It embodies the ability to transfer and apply skills and knowledge to new situations and environments.

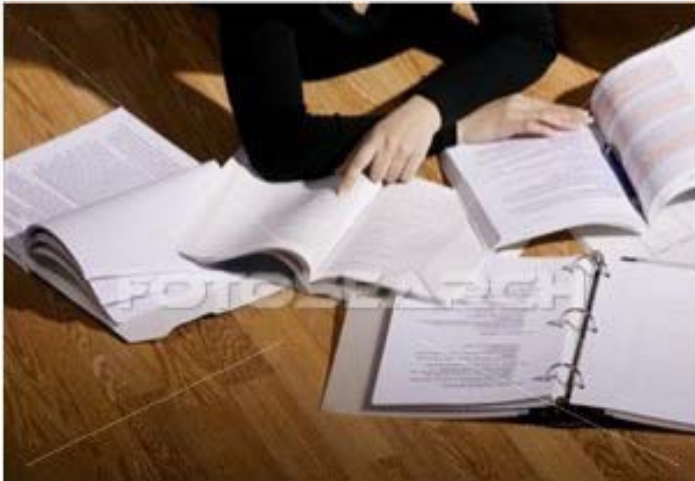
# What is Competency?

- ★ Competency comprises:
  - ❖ knowledge



# What is Competence?

- ★ Competency comprises:
  - ❖ knowledge and
  - ❖ skills



# What is Competence?

- ✦ Application of that knowledge and skill to the standards of performance required in the workplace.
- ✦ Competency includes all aspects of work performance and not only specific skills.

# Elements of Competence

- ★ Competency involves three elements.
  - ❖ Qualifications  
(Off the Job)
  - ❖ Experience  
(On the Job)
  - ❖ Recent and Relevant Training  
(Off and On the Job)

# What is Competence?

Competence assessments require objective evidence that is:

- ✦ *Valid – within scope.*
- ✦ *Direct – original work.*
- ✦ *Authentic – is genuine.*
- ✦ *Current – not out of date.*
- ✦ *Sufficient – covers all aspects of scope.*



# Units of Competence

The different types of work are covered by “Units of Competency”

- ❖ A unit of competency is the competency required for a useful work function and which resides with an individual. It must include the ability to apply both the theory and the practical skills.
- ❖ This should not be confused with a job description which may comprise a number of units of competency.

# Units of competence

Each Unit of Competence comprises:

- ❖ *Scope*
- ❖ *Pre-requisites*
- ❖ *Elements and performance criteria*
- ❖ *Scope Limitations*

# Application for Competence

An applicant is expected to provide:

- ★ Evidence of education and training:
  - ❖ Work experience in both non-hazardous and hazardous areas
  - ❖ Validation of the information
- ★ Personal details sufficient to uniquely identify the individual
- ★ Scope of Competence being requested
- ★ Declaration

# Owner/Operator Responsibility

In most countries legislation or regulations identify that the owner is responsible and accountable for the safety of the design, installation and maintenance of electrical equipment within their plant.

This is usually achieved through Occupational Health & Safety or Workplace legislation.

## How is Competence identified?

- ✦ An owner or occupier can accept the responsibility of deeming his own personnel as competent however they would face the consequences if there was an incident.
- ✦ They could rely on their personnel being considered competent through a company or National scheme
- ✦ Use of Competence through the IECEx Certification of Personnel Competence scheme

## Why is Competence required?

- ✦ Equipment must be used correctly. Persons must know what they are doing.
- ✦ Installations need to be safe
- ✦ Personnel Competence supports other certification schemes.
- ✦ Recognizes that both knowledge and skills are needed.

# Why is Competence required?

## Standards references

IEC 60079-14 Ed 4, Clause 4.4

IEC 60079-19 Ed 2, Clause 4.4

## Owner/Operator Responsibility

Responsible for plant safety

Use qualified persons

# Competence Evaluation

Meeting pre-requisite requirements

- ★ What information can be reasonably expected to be provided BEFORE being assessed.
  - ❖ General Education
  - ❖ Evidence of training for Hazardous Areas [Explosive Atmospheres]
  - ❖ Any licence or approval issued by a regulator
  - ❖ Experience!! Sufficient information such as:
    - ❖ Protection techniques used
    - ❖ Standards and Codes of Practice used
    - ❖ Classification, installation & circuit design, equipment selection, inspection, maintenance, testing and commissioning, repair



## Other Competence Schemes

- ✦ Philosophy is to provide training with accompanying assessment
- ✦ Scope coverage of units is inconsistent with some very specialised narrow content and others being extensive with broad content
- ✦ Slow to react to changes in Standards
- ✦ Training dependent
- ✦ Does not handle RPL or RCC very effectively
- ✦ Concentrates on either knowledge or skills but rarely both
- ✦ Not easy for those engaging a 'competent person' to understand the competence achieved

# IECEX Competence Scheme [CoPC]

- ★ The Scheme has been established to provide a consistent approach to the assessment of the Competence of personnel.
- ★ It assesses the individual – not an organization.
- ★ Independent of training to remove conflict so not concerned with how the knowledge and skills are obtained.

CoPC = Certificate of Personnel Competence

# IECE<sub>x</sub> CoPC

Managed by a Certification Committee [ExPCC] in IECEx

*"To maintain and enhance the policies and procedures relating to the operation of the CoPC Scheme within IECEx System. This includes the responsibility for the Scheme Rules, Operational Documents and Guide as well as any other documentation relevant to the scheme."*

# IECE<sub>x</sub> CoPC

IECE<sub>x</sub> CoPC has developed:

**IECE<sub>x</sub>05** - Scheme Rules based on:  
ISO/IEC17024; Guide 27; Guide 28 & Guide 65

Operational Documents for:

*OD501 - Assessment Procedures for ExCBs;*

*OD502 - Application for Personnel Competence;*

*OD503 - ExCB Procedures for issuing and maintaining certificates*

*OD504 - Specification for Units of Competence Assessment  
Outcomes.*

# Scheme Rules IECEx05

## Key details include:

- ❖ Principles of the IECEx Certification of Personnel Competencies Scheme
- ❖ Compliance with rules
- ❖ Appeals
- ❖ Withdrawal
- ❖ Suspension
- ❖ Complaints
- ❖ Security
- ❖ Confidentiality
- ❖ Typical Forms for application
- ❖ Governing of the IECEx Scheme for Competency
- ❖ Participating countries
- ❖ IECEx instruments
- ❖ Certification procedure
- ❖ Acceptance of certification bodies

# IECEX Units of Competence

There are ten Units of Competence:

1. Apply basic principles of protection in explosive atmospheres
2. Perform classification of hazardous areas
3. Install explosion-protected equipment and wiring systems
4. Maintain equipment in explosive atmospheres
5. Overhaul and repair of explosion-protected equipment
6. Test electrical installations in or associated with explosive atmospheres
7. Perform visual & close inspection of electrical installations in or associated with explosive atmospheres
8. Perform detailed inspection of electrical installations in or associated with explosive atmospheres
9. Design electrical installations in or associated with explosive atmospheres
10. Perform audit inspection of electrical installations in or associated with explosive atmospheres

# IECEX Units of Competence

- ★ Scope limitations:
  - ❖ *Type of explosion protection*
  - ❖ *Product type*
  - ❖ *Groups*
  - ❖ *Voltages*
  - ❖ *Other* – which may be related to specific National requirements
- ★ Validity
  - ❖ *Surveillance*
  - ❖ *Re-assessment every 3 years.*

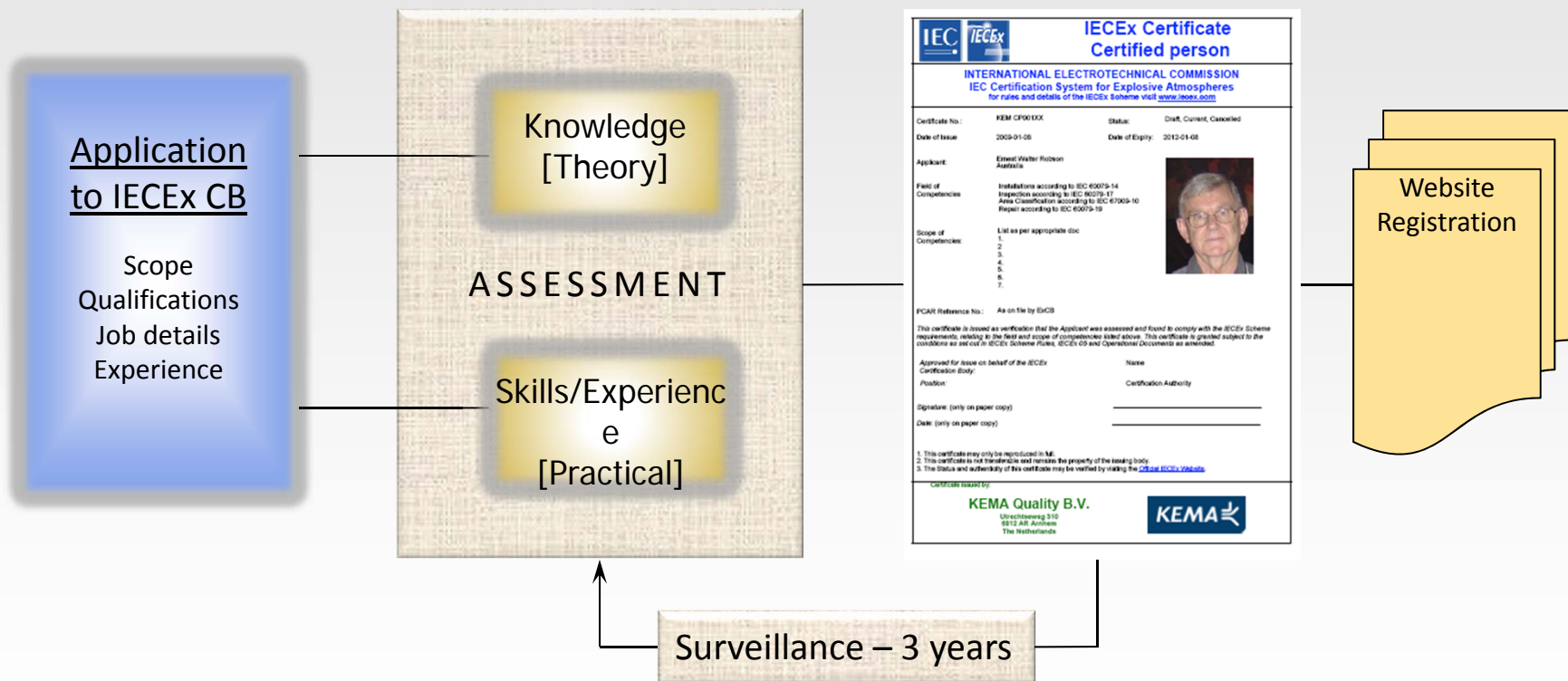
## Documents for the IECEx CoPC Scheme

- ✦ *Application Form*
- ✦ *A Certificate of Personnel Competence [CoPC]*
- ✦ *A Personnel Competence Assessment Report [PCAR]*
- ✦ *An Identification Card (credit card size)*

Details of the Certificate, ID Card and PCAR can be verified on-line at [www.iecex.com](http://www.iecex.com)



# IECEX CoPC Process



# Summary

Standards for hazardous locations require the use of special equipment to avoid ignition of the atmosphere.

If that special equipment is NOT installed correctly it may no longer provide the explosion protection integrity and therefore cause the installation to be unsafe.

The use of Competent persons ensures that equipment will be used correctly and the explosion protection integrity for the life of the equipment will be maintained.

Competent persons are able to identify faults which could become potential sources of ignition.

## Summary

It is possible for the IECEx CoPC to open the way for a global scheme to provide consistency in the assessment of competent persons. It provides separation from training schemes therefore giving the highest level of integrity of assessment. Recognition that the knowledge and skills could be obtained by any means such as tertiary education, internal company training, external private training, on the job mentoring, etc., is provided.

The IECEx CoPC Scheme is likely to become the benchmark for competency requirements for use within any framework providing essential support for the overall package of compliance requirements for hazardous areas.

# FINISH

Many thanks for your participation!