

SPECIFICATION ON RECOGNITION OF TRAINING  
COURSES AS PART OF PERSONNEL CERTIFICATION  
REQUIREMENTS

ANEXES

**Document No:** Related to IPC SC-11-02 Specification on  
training Issue 1

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### **Annex – Learning Objectives for QMS Auditor Training Courses**

These learning objectives are offered as a minimum basis for QMS auditor training courses. PCB may wish to add objectives to meet their own requirements.

**1. Describe the purpose of a quality management system and explain the 8 principles of quality management.**

- 1.1 Explain the purpose and business benefits of a quality management system.
- 1.2 Explain the 8 principles of quality management.
- 1.3 Explain the process approach to management systems.

**2. Explain the purpose, content and interrelationship of ISO 9000, ISO 9001 and ISO 9004.**

- 2.1 Explain the purpose of the ISO 9000 series and explain the interrelationship between ISO 9000, ISO 9001, ISO 9004 and ISO 19011 and outline the process for the continuing development of these standards.
- 2.2 Describe the difference between auditable standards and guidance documents.
- 2.3 From an auditing perspective and with regard to ISO 9001:
  - a) Explain the terminology related to ISO 9001 and quality management systems, drawing on ISO 9000 definitions.
  - b) Describe the structure of ISO 9001.
  - c) Explain the intent and requirements of each clause of ISO 9001, drawing on ISO 9004 as appropriate to illustrate the broader intent of the ISO 9001 requirements.
  - d) Draw links between the 8 quality management principles and the requirements of ISO 9001.
  - e) Explain the difference between legal compliance and conformance with ISO standards.
  - f) List the benefits of documenting a quality management system and suggest approaches for doing so in a variety of situations.
  - g) Differentiate between the scope of audit and the scope of ISO 9001, and describe the basis on which exclusion of ISO 9001 management system requirements might be permissible.
  - h) Suggest what objective evidence might be needed to demonstrate conformance with ISO 9001 requirements.

**3. Explain the role of an auditor to plan, conduct, report and follow up a quality management system audit in accordance with ISO 19011.**

- 3.1. Accredited certification and auditor certification:

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- a) Explain the terms certification/registration and accreditation, describe the certification/registration and accreditation processes and state the purpose and benefits of a certified/registered quality management system.
  - b) Outline the role of PCB's in setting auditor certification requirements.
- 3.2 Audit process
- a) Explain the differences in the purpose and conduct between 1st, 2nd and 3rd party audits.
  - b) Referring to ISO 19011, outline the audit process from initiating the audit to conducting audit follow up, including the 2-stage approach.
  - c) The process approach to auditing (see appendix for guidance).
- 3.3 Auditor responsibilities
- d) Describe the roles and responsibilities of the client, auditors, lead auditors, guides and observers, in accordance with ISO 19011.
  - e) Explain the management responsibilities of the lead auditor in managing the audit and the audit team.
  - f) Explain the need for effective communication with the auditee throughout the audit process.
  - g) Explain the need for auditor confidentiality.
  - h) Outline the content and intent of PCB's code of conduct.
- 3.4 Audit planning
- a) Describe typical forms of pre-audit contact and their purpose, including when they might be appropriate.
  - b) State the purpose of a document review and describe a typical document review process and outputs.
  - c) Explain the purpose and significance of the audit scope, the importance of team competency and the selection of team members, particularly with regard to knowledge of the relevant industry, regulations and legislation
  - d) Identify objectives and considerations for an on-site, process-based, audit plan.
  - e) Explain the use, benefits and potential limitations of a checklist.
  - f) Identify considerations for planning an audit of an activity for which there are no documented procedures.
- 3.5 Conducting the audit
- a) Explain how to approach a process audit, including audit of process inputs, outputs and results of the process in terms of outcomes and explain how process measures, quality objectives and continual improvement would be addressed through such an audit (see guidance in Appendix 1).

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- b) Describe the purpose of, typical content of, and attendees typically present at audit meetings, including opening and closing meetings, audit team meetings and auditee feedback/review meetings.
  - c) Differentiate between documents and records.
  - d) Describe the benefits and limitations of sampling.
  - e) Explain the process of, and different methods for, gathering objective evidence during an audit.
  - f) Explain the typical role of top management in an audit and suggest approaches for auditing top management commitment.
- 3.6 Reporting and following up the audit
- a) State the purpose and typical content of a non-conformity report.
  - b) Describe typical systems for grading non-conformity reports and the implications and further actions required for different grades of non-conformity.
  - c) Explain the terms correction, corrective action and preventive action and describe the roles and responsibilities for taking and verifying corrective action.
  - d) Identify types of objective evidence that may be required to demonstrate effective implementation of corrective and preventive action.
  - e) Explain the purpose of surveillance visits.
- 4. Plan, conduct, report and follow up an audit in accordance with ISO 19011 and by interpreting ISO 9001.**
- Skills (to be practiced and tested through tasks and in real or simulated audit situations)**
- 4.1 Audit responsibility
- a) Undertake the roles of an auditor and audit team leader, including management and co-ordination of the audit team.
- 4.2 Audit planning
- a) Perform a document review in order to assess whether documentation meets ISO 9001 requirements and to determine whether adequate arrangements are in place to justify proceeding with the on-site audit.
  - b) Establish audit resource requirements.
  - c) Write an audit scope.
  - d) Prepare an on-site audit plan that is appropriate to the sequence and interaction of the organization's processes.
  - e) Prepare the necessary work documents: an audit checklist, sampling plan, forms, etc.
- 4.1 Conduct an audit and demonstrate ability to:

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- a) Control meetings, interviews etc.
  - b) Use a checklist effectively and follow audit trails
  - c) Gain an understanding of the process, including its purpose, inputs, outputs, controls and related quality objectives
  - d) Build rapport with the auditee
  - e) Question
  - f) Listen
  - g) Make notes
  - h) Search documents
  - i) Select sufficient and relevant samples
  - j) Provide feedback to the auditee
  - k) Demonstrate sensitivity to the needs and expectations of the auditee, including local customs and culture
  - l) Make sense of the information gathered in the context of ISO 9001.
- 4.2 Reporting and follow up
- a) Evaluate objective evidence gathered and correctly identify conformance and non-conformance with requirements.
  - b) Recognize and report positive audit findings.
  - c) Identify opportunities for improvement.
  - d) Write and grade non-conformity reports based on objective evidence obtained during the course of the audit.
  - e) Make recommendations for certification/supplier approval based on audit findings.
  - f) Present audit findings and recommendations to the auditee.
  - g) Evaluate proposals for corrective action and differentiate between correction and corrective action.

## **Annex – Learning Objectives for EMS Auditor Training Courses**

These learning objectives are offered as a minimum basis for EMS auditor training courses. PCB may wish to add objectives to meet their own requirements.

- 1. Describe the purpose of an EMS and explain the principles, processes and techniques used for the assessment and management of environmental aspects, including the significance of these for EMS auditors.**
  - 1.1 Describe the purpose of an environmental management system in managing environmental aspects and impacts.
  - 1.2 Describe background and general environmental issues, and the concepts of environmental management and sustainable development as strategic business drivers.
  
- 2. Explain the purpose, content and interrelationship of ISO 14001, the ISO 14000 series guidance standards, and the legislative framework relevant to an EMS.**
  - 2.1 Explain the purpose and intent of ISO 14001 and how it interrelates with the other ISO 14000 series documents, distinguishing between guidance and requirements, including the background and continuing development of these standards and the current status of the ISO 14000 series.
  - 2.2 Explain the structure, intent and requirements of each clause of ISO 14001.
  - 2.3 Summarize relevant environmental legislation concerning pollution control concerning emissions to air, discharges to water and disposal to land, including control over hazardous substances, (this must include an overview of relevant international environmental treaties and agreements), and how relevant legislation can be sourced.
  - 2.4 Explain the difference between legal compliance and conformance with ISO standards, including the significance of these terms when conducting audits.
  - 2.5 Explain the benefits of documenting an environmental management system, suggest approaches for doing so in a variety of situations and the difference between documents and records.
  
- 3. Explain the role of an auditor to plan, conduct, report and follow up an audit in accordance with ISO 19011.**
  - 3.1. Describe the structure of the EMS certification industry, including
    - a) The differences in purpose and conduct between 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> party audits, the different types of environmental audits and assessments and the relevant terminology.

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- b) The International Accreditation Forum interpretations and guidelines for 3rd party Certification Bodies (Registrars), including the two-stage approach.
  - c) The system of accredited certification (registration), including the functions of the Accreditation Bodies and Certification Bodies (Registrars).
  - d) The role of PCB in the approval of training courses and certification of auditors.
- 3.2 Describe the role of the auditor, including:
- a) The EMS audit process and auditing principles, methodology and good practice as described in the current revision of ISO 19011.
  - b) The roles and responsibilities of the client, auditors, lead auditors, auditees and guides in accordance with ISO 19011, including the management and team leader responsibilities of the Lead Auditor in managing the audit and the audit team.
  - c) The need for effective communication with the auditee, for auditor confidentiality, and for auditors to be sensitive to local customs throughout the audit process.
  - d) The PCB code of conduct.
- 3.3 Describe the process of planning an audit:
- a) Describe typical forms of pre-audit contact, their purpose and when they might be appropriate.
  - b) State the purpose of document review/stage one audits and describe a typical document review process and outputs.
  - c) Explain the purpose and significance of the audit scope, the importance of team competency and selection of team members particularly with regard to process knowledge and local environmental regulations.
  - d) Explain the use, benefits and potential limitations of a checklist (or alternative), and considerations for planning an audit of an activity for which there are no documented procedures.
- 3.4 Describe the process of conducting an audit:
- a) Describe the purpose of, typical content of, and attendees typically present at audit meetings, including opening and closing meetings, audit team meetings and auditee feedback/review meetings.
  - b) Explain the process of, and different methods for, gathering objective evidence during an audit, including the benefits and limitations of sampling and of observation.
  - c) Explain the typical role of top management in an audit and suggest approaches for auditing top management commitment.
- 3.5 Describe the process of reporting and following up an audit:

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- a) State the purpose and typical content of a non-conformity report, and describe typical systems for grading non-conformity reports, including the implications and further actions required for different grades of non-conformity.
  - b) Explain the terms correction, corrective action and preventive action and describe the roles and responsibilities for taking and verifying corrective action.
  - c) Identify types of objective evidence that may be required to demonstrate effective implementation of corrective and preventive action.
- 3.6 Explain the purpose of ongoing surveillance visits.
- 4. Undertake the role of an auditor to plan, conduct, report and follow up an audit in accordance with ISO 19011 and by interpreting the requirements of ISO 14001.**
- 4.1 Undertake the role of an auditor and/or audit team leader to plan an audit:
- a) Identify the pre-audit information required to plan the duration and resources needed to conduct the on-site audit and write an audit scope.
  - b) Prepare an on-site audit plan that is appropriate to the sequence and interaction of the organization's processes, their environmental aspects and significant impacts, and produce an audit checklist (or alternative).
  - c) Perform a document review or stage one audit in order to assess whether documentation meets ISO 14001 requirements and to determine whether adequate arrangements are in place to justify proceeding with the implementation audit.
- 4.2 Undertake the role of an auditor to manage and conduct an audit to evaluate an organization's effective implementation of processes, procedures and methodologies for conformance with ISO 14001:
- a) Participate in and demonstrate ability to control opening and closing meetings.
  - b) Make sense of the information gathered in the context of ISO 14001 and the audit organization by:
    - gaining an understanding of its processes, including their purpose, inputs, outputs, controls and related performance indicators
    - selecting sufficient and relevant samples
    - reviewing appropriate documents
    - differentiating between documentation and records
    - exercising objectivity in the review of evidence collected.



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- c) Demonstrate effective interpersonal skills and interview techniques through ability to:
    - build rapport with the auditee
    - use appropriate types of questions
    - listen effectively
    - make notes, use a checklist effectively and follow audit trails
    - provide feedback to the auditee
    - be sensitive to the needs and expectations of the auditee, including the local customs and culture.
  - d) Interpret and apply ISO 14001 appropriately in an audit situation to evaluate:
    - The adequacy of an organization's identification of environmental aspects, and significant impacts and methodologies for developing environmental controls over operations.
    - The effective implementation of an organization's management control over operations and monitoring of performance, including emergency preparedness and response plans.
    - The rationale for setting priorities, objectives and targets, and the management programmes to ensure that actions are taken to achieve planned improvements.
    - The conformance of an organization's environmental management system against the relevant environmental management system requirements (including elements of the EMS including policy, processes and procedures, records showing relevant legislation and evidence of current compliance, environmental aspects and significant impacts, objectives, targets and programmes for achieving continual improvement and prevention of pollution).
- 4.3 Undertake the role of an auditor to report and follow up the audit:
- a) Evaluate objective evidence gathered and correctly identify conformance and non-conformance with requirements.
  - b) Recognize and report positive audit findings and opportunities for improvements.
  - c) Write a meaningful and accurate summary report of the audit including graded non-conformity reports based on objective evidence obtained during your course of the audit.
  - d) Make recommendations for certification/supplier approval based on audit findings.
  - e) Present audit findings and recommendations to the client.

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- f) Evaluate proposals for corrective action and differentiate between correction and corrective action.

**Annex – Learning Objectives and other requirements for ICT Training Courses**

These learning objectives and the other requirements are offered as a minimum basis for ICT training courses. PCB may wish to add objectives to meet their own requirements.

- 1. Describe the purpose of the course and explain the principles, processes and techniques used for each applicable course element.**
  - 1.1 Develop policy for ICT training.
  - 1.2 Describe purpose of each ICT system and/or application and the background, general requirements, and the concepts of each ICT element covered.
  - 1.3 Describe the process flow of IST system elements to be trained to.
  - 1.4 Describe training objectives per ICT system element.
  - 1.5 Describe training methods per objective.
  - 1.6 Describe training levels (if applicable, see part 4)
  - 1.7 Make a clear distinction between theoretical and practical training.
  - 1.8. Describe in details training objectives set for theoretical and practical training.
  - 1.9 Considerations for ICT distance learning programs developed (if applicable).
  - 1.10 Describe methods for creation of the appropriate environment for retention of knowledge and skills transfer.
  - 1.11 Set up policy unit to determine international trends. Develop procedure to define requirements for local environment. (if applicable)
  
- 2. Hardware and Software requirements.**
  - 2.1 Describe the required hardware, including setting and calibration procedures (if required).
  - 2.2 All hardware manuals should be available.
  - 2.3 Describe the required software, including installation and setting procedures (if required).
  - 2.4 All hardware manuals should be available.
  - 2.5 Describe all ICT security procedures required.
  - 2.6 Describe training center requirements.
  - 2.7 Describe support requirements (such as networks, connectivity, storage, multimedia environment etc)
  - 2.8 Consideration for the use of open-source software (if applicable)

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- 3. General/Other improvement tips. This clause doesn't set requirements but suggests tools for improvement that can be selected based on the maturity of each individual learning environment**
- 3.1 Individuate learners with similar needs and/or profiles and provide them a co-operative environment to support social interactions, mentoring and the exchange of information. The same environment will be used to interface synchronously and asynchronously the students.
- 3.2 Apply a learner model based on an emerging standard format (e.g. PAPI, LIP, etc) to represent learner assessed achievements.
- 3.3 Apply sound learning strategies, based on needs and individual learning styles and provide the ability to automatically improve such strategies by exploiting information about knowledge assessments before and after training experiences.
- 3.4 Arrange high quality contents covering ICT related topics and make them available to the trainees. This will include the provision of a methodology relying on emerging standards and a software tool (if available) to organize and issue quality learning objects (see section 1).
- 3.5 Evaluate training environment with real users inside and outside a real enterprise environment monitored by expert of training evaluation in order to assess the impact for the parties involved and to prove the added value of the new learning environment in terms of cost effectiveness, learning efficiency, flexibility in time and space and user satisfaction.
- 3.6 Sketch and evaluate a sustainable business model around the proposed training solution in order to demonstrate the longer-term feasibility of the learning solution as part of a business offer. The model will involve not only the technology provider but also content provider organizations and tutors.
- 3.7 Aim and customize ICT training per target groups at different stages of their lives: i.e. young people, unemployed adults, workers, non-professional. This approach will include three main components: the development of local learning centers, the promotion of new basic skills, in particular in information technologies, and increased transparency of qualifications.
- 4. Considerations on fundamental role and challenges of human resources development and training including ICT sector. In order to face up to the challenges ahead, training course must take under consideration the following categorization of training, and adjust accordingly their training programs:**
- 4.1 **Basic education.** Basic education is the first, and an essential, element of the process of lifelong learning. It instills "foundation skills" such as literacy, numeracy, citizenship, social skills, learning to learn skills, and the ability to solve problems together. Such skills are fundamental for living and working in

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today's society, for acquiring advanced skills ("trainability") and for making use of new technologies.

- 4.2 **Core work skills.** These skills, alternatively called "key skills", "critical enabling skills", "basic skills", "essential skills", are the non-technical skills that everybody will need in order to perform satisfactorily at work and in society, irrespective of where the individual works and lives. They build upon and strengthen, and often overlap with, the foundation skills developed in basic education. They aim at enabling workers to constantly acquire and apply new knowledge and skills. They include, learning-to-learn skills, literacy and numeracy (reading, writing and computation skills), listening and oral communication skills, problem-solving skills and creativity, personal effectiveness (self-esteem, goal-setting and motivation, skills for personal and career development), group effectiveness (interpersonal, teamwork and negotiation skills) and organizational effectiveness and leadership skills. Core work skills can also be considered to include so-called labor market "navigation" skills. They include job search skills, skills to present her or himself to prospective employers, skills to identify one's career options and opportunities and identify and evaluate job and education and training opportunities; and also familiarity with the Internet as many jobs, career opportunities and guidance services are increasingly available online.
- 4.3 **Lifelong learning.** Lifelong learning is the new catchword for education and training policies in the twenty-first century. It permeates new policy developments in a growing number of countries. The lifelong learning framework emphasizes that learning occurs during the entire course of an individual's life. Formal education and training contributes to learning, as do non-formal and informal learning taking place in the home, the workplace, the community and society at large.

Its key features are the following:

- the centrality of the learner, catering to a diversity of learner needs;
- emphasis on the motivation to learn, e.g. through self-paced, self-directed and increasingly ICT-assisted learning;
- the multiplicity of educational and training policy objectives and the recognition that an individual's learning objectives may change over the course of her/his lifetime;
- and that all kinds of learning - formal, non-formal and informal - should be recognized and made visible.