

PETRONAS TECHNICAL STANDARDS
HEALTH, SAFETY AND ENVIRONMENT

HSE COMPETENCE ASSURANCE
(GUIDELINE)

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PREFACE

Petronas Technical Standards (PTS) are based on the experience acquired during the involvement with the design, construction, operation and maintenance of processing units and facilities. Where appropriate they are based on, or reference is made to, national and international standards and codes of practice. The objective is to set the recommended standard for good technical practice applied by PETRONAS in oil and gas production facilities, oil refinery, gas processing, chemical plants, marketing facilities or any other such facility, and thereby to achieve maximum technical and economic benefit from standardisation.

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AMENDMENT RECORD SHEET

Chapter No.	Section No.	Description	Issue No.	Date	Revision No.	Date	Approve by: (initial)
All	All	PTS 60.0206 HSE Competence Assurance to Management	1	June 05	0	0	IGA

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CONTENTS

PREFACE	2
AMENDMENT RECORD SHEET	3
CONTENTS	4
ACKNOWLEDGEMENT	5
1. BACKGROUND TO THE GUIDELINE	6
1.1 Objective of This Document	6
1.2 What is 'Competence'?	6
1.3 What is Competence Assurance in HSE Management?	7
1.4 Scope and Application	9
1.5 Approach	11
1.6 Responsibilities in Competence Assurance	11
2. IMPLEMENTING THE GUIDELINE	13
2.1 Framework for Competence Standards	13
2.2 Defining Standards of Competence	15
2.3 Carrying out Assessments	15
2.4 Controls	18
APPENDIX I - REQUIREMENTS FOR CONTRACTOR COMPETENCE ASSURANCE	22
APPENDIX II - CATEGORISATION OF HSE ROLES	25
APPENDIX III - DEFINITIONS	28
APPENDIX IV - 'NOT YET COMPETENT' PROCEDURE	30
APPENDIX V - EXAMPLE CHECKLIST FOR APPROVAL OF COMPETENCE STANDARDS	34
APPENDIX VI - ASSESSMENT PROCESSES	35
APPENDIX VII - VERIFICATION FOR COMPETENCE ASSURANCE	40
APPENDIX VIII - SAMPLE COMPETENCE ASSESSMENT FORM	45

ACKNOWLEDGEMENT

This document is prepared as a guideline to assist OPU/JVs develop a competence assurance system for HSE-critical activities. Competence assurance is an essential element of any management system. It is implicit that the associated suite of competences must be resident in the workforce and that line management must assure that the competences are relevant and verified.

1. **BACKGROUND TO THE GUIDELINE**

1.1 **OBJECTIVE OF THIS DOCUMENT**

This document forms an integral part of PETRONAS competence and skills development programme, based on the quality process

It is the policy and objective of Management that all staff performing HSE-critical roles are competent, in accordance with the competency standards and assessment criteria for each role or activity. This needs to be demonstrated in accordance with the agreed HSE Case for each installation.

The document provides guidelines to enable OPU/JVs establish that valid and reliable controls are in place to ensure personnel are competent to discharge their HSE-critical responsibilities in a safe and effective manner. These stakeholders could include shareholders, management, staff, venture partners, and regulatory authorities.

1.2 **WHAT IS 'COMPETENCE'?**

In this document all references to competence mean:

'The ability in terms of skill, knowledge, and awareness to perform an activity within an occupation or function to specified standards'.

The element of 'attitude' that is sometimes included in the definition of competence is dealt with in staff appraisals and will not be addressed in this competence assurance process.

The definition appears deceptively simple but it is quite specific in what must be assessed. It means looking at what people produce in the course of performing their work (not what they put into it) and it also means that what they produce is assessed against a standard.

The key aspects about the definition are:

- the emphasis on performing work (not knowledge or skills for their own sake)
- the words 'to specified standards' (so that assessment can be objective and not subjective).

The definition implies a more formal, objective process of assessing performance than most past practices and is concerned with being clear about what is being assessed and how it is assessed.

Knowledge and understanding underpin competent performance. Competent behaviour usually means selecting the right knowledge from a wider base, and applying it to suit the situation at hand. No matter how much knowledge or intellectual understanding people have, if they cannot apply it appropriately at work, they cannot be considered to be competent.

In most routine situations, essential knowledge should be clearly defined within the standard of competence. Where it is difficult to predict exact situations (e.g. in emergencies or circumstances requiring diagnosis and deduction), people have to apply skills such as problem analysis and decision making, and call on a wide base of knowledge and understanding. In these cases, guidance on assessment must take account of the practical problems of simulating unusual situations. It may include tests of knowledge and understanding to supplement performance assessment.

1.3 WHAT IS COMPETENCE ASSURANCE IN HSE MANAGEMENT?

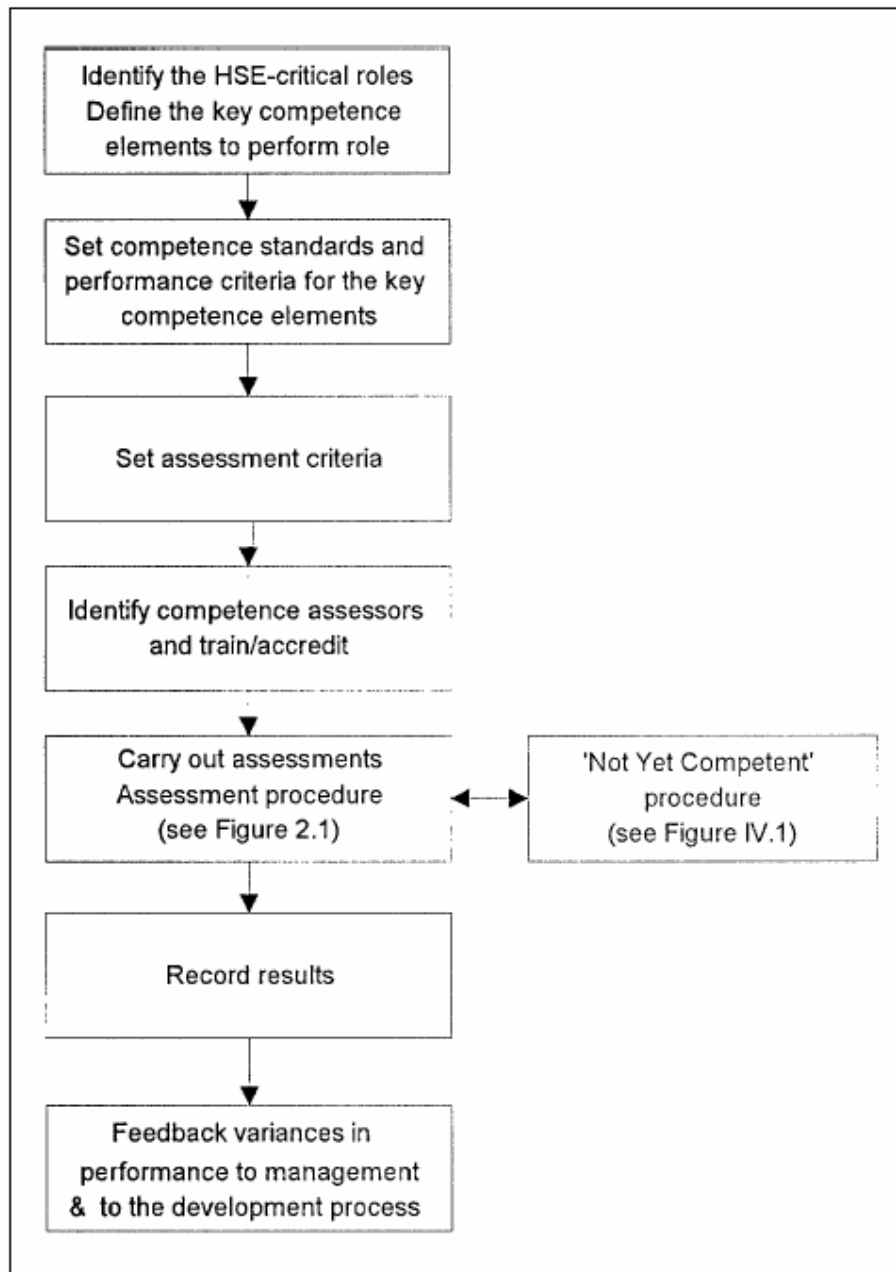
Competence assurance is a necessary ingredient of an effective HSE Management System (HSE MS) and is needed to ensure, through rigorous appraisal, that people have the required levels of skills, knowledge, and awareness to perform their roles adequately and safely in a particular context.

The competence assurance process is used to verify the attainment of the threshold of performance which people must meet before they are allowed to perform their work unsupervised, and which they must then continue to maintain or exceed. It is an instrument of management control.

Competence assurance involves:

- defining critical roles and the work (critical activities) to be performed by the critical-role holder
- establishing minimum standards of performance for critical roles and activities
- development of assessment criteria for each critical role and activity
- assessing against specified standards the abilities of individuals to perform the critical roles
- formally verifying the level of competence that is demonstrated
- recording the results of assessments
- feeding back variance to the assessed individual and to line management, and notifying management of successful appraisals.

- identification of and training of competence assessors as depicted pictorially below



The definitions of critical roles should relate directly to the hazards and the potential risks that are identified in the installation or activity HSE Cases.

Competence assurance is associated with other personnel management activities

(e.g. Staff Annual Review), some of which contribute to the provision of a competent workforce but do not in themselves assure competence. It is one of the Check and Feedback components of the quality system for the management of competence. Other related parts of the system would include:

- staff planning
- a strategy/policy document
- professional staff development
- training (development of knowledge and awareness - courses, seminars, etc.)
- skill development (hands-on practice with coaching)
- staff assessment.

1.4 SCOPE AND APPLICATION

This document describes the general process. It does not cover the specifics of job descriptions, recruitment and selection, staff appraisal, assessment of potential, training and development, reward and recognition, or vocational certifications. These are recognised as essential elements of the management of competence and are dealt with separately by human resources and training departments.

While the focus of this guideline is on HSE-critical and HSE-related competence, the methods and processes herein described are relevant to and could be used for all competences. For the HSE-critical competences the assurance process assesses:

- demonstrated performance against specified criteria and
- failure to meet the standards implies that the individual is not yet capable of fulfilling the role in question at that time.

Technical and managerial competence is assessed by line supervision against corporate standards and the outcome is recorded in the employee's annual staff appraisal review.

The concepts of this guideline are applicable to all roles identified under the HSE Management System regardless of whether they are carried out by employees of PETRONAS, contractors (see Appendix I), vendors, representatives or service companies.

To aid priority setting, to contain bureaucracy, and to make the competence assurance process manageable, the roles under the HSE Management System have been divided into two levels:

Level 1: HSE-CRITICAL ROLES

These include key accountabilities for activities where incompetent actions by an individual could lead directly to serious injury, occupational illness, fatality, significant loss, or major damage, either to the assets or the environment. These activities are normally associated with the Control or Recovery elements of the Hazards and Effects Management Process (HEMP).

Level 2: HSE-RELATED ROLES

All other roles identified under the HSE Management System (i.e. those that contain only the Identification and the Assessment elements of the HEMP) are considered as Level 2.

NB: the aggregate of Level 1 and Level 2 roles comprise all competences found in the HSE-critical activities.

The above classification provides an opportunity to identify and prioritise (on the basis of the criticality of the type of work being performed) a manageable portion of the workforce, on which to initiate the development and implementation of a competence assurance system.

Individuals should not be allowed to fill Level 1 roles until they have been assessed and found competent in HSE-critical abilities, except during the initial period of implementation of a competence assurance system.

During the initial implementation period of the competence assurance system, Line and Function representatives should establish an implementation schedule for each Level 1 role. This should include dates after which individuals would not normally be allowed to continue alone in the role, regardless of their previous experience, unless they have been assessed and found competent.

Before the agreed date of implementation, individuals who are already filling Level 1 roles are deemed competent unless they have been assessed and found 'not yet competent'. After the agreed date, all candidates not yet assessed for Level 1 roles must be closely supervised (by an already-competent individual) whilst performing any of the associated activities.

Candidates for Level 1 roles are assessed regarding their competence in relevant HSE-critical activities against established standards. In general, the overall competence of employees in both Level 1 and Level 2 roles are reviewed and evaluated by line supervision through the existing staff appraisal process and the

outcome recorded in the annual staff appraisal report.

Appendix II describes the categorisation and provides some examples of Level 1 roles.

1.5 APPROACH

To achieve the guideline objective, PETRONAS follows an approach in which:

- competence requirements are analysed and prioritised
- it is ensured that contractor systems are compatible with the PETRONAS system
- standards of competence are defined for all Level 1 roles
- assessment methods are based on performance at work or on realistic simulation of the work to be performed
- assessment is carried out by approved assessors (e.g. competent line supervisors)
- assessment standards are monitored to ensure consistency of application
- a record is kept of the competence achieved by each person and the information is available to the supervisor and the individual at the workplace.

The following premises are observed:

- there will be consistent use of the terms as defined in Appendix III
- there will be common standards used for assessment
- the process will be congruent with industry/national standards where applicable
- there will be a clear audit trail and improvement loop within the process.

Specific guidelines for treatment of candidates for Level 1 roles who are found to be 'not yet competent' are given in the Not Yet Competent Procedure in Appendix IV.

1.6 RESPONSIBILITIES IN COMPETENCE ASSURANCE

1.6.1 **Human Resource Manager**

The OPU/JV is responsible for ensuring that Competence Assurance requirements are being fulfilled, by implementing internal audits with the support of line management and functional departments.

The Human Resource Manager is responsible for:

- design, implementation and maintenance of the Competence Assurance System
- developing and agreeing an implementation plan with line management and functional
- departments and reporting progress against it
- maintaining the central competence recording system
- acting as assurance sponsor and presenting recommendations for improvements of the Competence Assurance System to senior managers
- maintaining the Competence Assurance Manual
- ensuring that line managers have access to complete records of competent persons.

1.6.2 **Line Management**

Line management (including the line management of contractors, vendors and service companies) is responsible for:

- planning and controlling work so that it may be performed without continuous direct supervision, only by people who have been assessed and found competent
- ensuring that competence assessment systems are correctly implemented and completed in accordance with an agreed implementation plan
- the suitability, for their particular circumstance, of standards used for assessment,
- appointing competent assessors
- retaining documents associated with assessment of candidates for Level 1 roles

- submitting information to a central competence recording system and personal files, as required
- ensuring that each installation or activity workplace has access to a complete record of competent persons
- ensuring that contract sponsors include (in any prequalification exercise) an assessment of contractor competence assurance systems
- requiring that external organisations appointed to carry out competence assurance activities are able to demonstrate that they have valid and reliable systems for competence assurance
- monitoring the provision of suitably competent personnel by contractors, vendors and service companies.

The responsibilities of contractors are more fully described in the Requirements for Contractor Competence Assurance in Appendix I.

1.6.3 Functional Departments or equivalent

The functional departments (e.g. Drilling, Exploration, Production, etc.) are the discipline heads and senior advisers that supply support direct to the Line.

These people are responsible for:

- adopting, setting and maintaining standards of competence which, as a minimum, satisfy legislative requirements for PETRONAS employees and provide guidance on assessment
- providing assurance that the standards adopted by key contractors are acceptable and approved confirming, where appropriate, that a system is in place which ensures that all individuals have been deemed competent by means of a valid and reliable process.

2. IMPLEMENTING THE GUIDELINE

2.1 FRAMEWORK FOR COMPETENCE STANDARDS

A framework is needed to analyse and prioritise competence requirements.

This framework is used to:

- determine which are the HSE-critical competences and prioritise them
- develop sets of competence profiles for identified roles

- develop detailed competence standards using a consistent format
- avoid gaps in coverage, or overlap and duplication.

The process begins by 'mapping' the competences required in an activity or for a facility using a 'topdown' approach starting with a key purpose statement of the business, analysing the human functions needed to fulfil that purpose, and working down until obvious individual activities start to emerge. These activities, are then linked to actual roles, tasks, and responsibilities so that meaningful, assessable standards can be developed. Where a HSE Case is in place the activity lists will already exist and need only to be sorted for the Level 1 roles.

The emphasis should be to identify competences that can be applied across a range of situations and roles. The purpose of this is to keep the framework simple, providing consistent assessment models, avoiding repetition and confusion. For example, operating almost any type of equipment means being able to start-up and shutdown, to monitor, control and deal with unexpected events. Therefore, the description of the competence to operate pumps or compressors or fired heaters could have the same structural framework, i.e. start-up, shut down, monitor, etc.

Competences in place for some activities may imply some ability at a lower level as well.

For example:

- competence to authorise permits as a system custodian implies competence as a worksite permit supervisor
- competence in a fire-team leader must include some ability to carry out the duties of fire-team members
- competence to carry out high voltage isolation implies the ability to carry out low voltage isolation.

Most skilled jobs are likely to consist of about 10 to 15 activities, only some of which will be HSE-critical. In excess of 20 activities for a job usually suggest that the analysis may have gone into too much detail too early or that there may be something unusual about the organisational structure.

Note: If the HSE Case is in place, the critical roles and tasks should already have been identified.

SETTING PRIORITIES

The roles under the HSE management system have been divided into two levels as identified in 1.4.