Competence Management

Assuring the performance of safety critical personnel on demand

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What is competence?

Competence is the continuing ability of individuals and teams to perform reliably the MAH elements of their roles, responsibilities & tasks, and for this to be demonstrable against standards.
What is competence management?

Establish requirements

Audit & review

Design the system

Maintain competence

Implement the system
Human Factors and Major Hazards

• Aim
  – Maintain control of major accident hazards.

• Objectives
  – Assured performance of safety critical systems.
  – Demonstrate control.
Human Factors and Major Hazards

• Safety critical components will perform as expected on demand.
  – Includes humans!

• Specification, maintenance and testing.
  – Includes humans!!

• Demonstration of a structured, systematic approach to risk control.
  – Includes humans!!!
Human Factors and Competence

- Human Error Analysis
- Task Analysis
- Safety Critical Tasks

- Procedures

- Monitor & Review

- Training
- Consolidation
- Competence Assurance
Human Factors and the Real World?

Procedures

Training
Safety Critical Tasks

• Risk based approach
  – COMAH scenarios.

• Those tasks which could initiate or propagate a major incident through human action or inaction.
Task Analysis

• Fit for purpose
  – HTA – complex tasks with conditional branching etc.
  – Flowcharts – limited branching
  – Sequential lists

• Write down what people should do following a logical plan.

• Check with walk/talk through.
Human Error Analysis

• 3 main types of human failure
  – Slips & lapses – skill based failure
  – Mistakes – knowledge based failure
  – Violations – deliberate actions

• Human HAZOP key words
  – HSE web guidance

• Hierarchy of control – procedures are a soft control.
Procedures

• Fit for purpose
  – Training – sufficient detail.
  – Support – job aids.

• Designed to be used
  – User involvement.
  – Consistency.
  – Procedure for procedures.
Training & Consolidation

• Training
  – Appropriate to site risks
  – MAH content (the why)

• Consolidation
  – Time to develop the skills
Monitor and Review

• Personnel
  – Task observation
  – Sub-standard performance

• System
  – Fit for purpose
  – External triggers
Assuring performance on demand of safety critical personnel
www.hse.gov.uk/humanfactors/comah/competence.htm

Human factors: Competence

Competence is the ability to undertake responsibilities and to perform activities to a recognised standard on a regular basis. Competence is a combination of practical and thinking skills, experience and knowledge.

- Human factors briefing note no. 2 - Competence [PDF 145kb]
- Extract from inspectors human factors toolkit - Core topic 1: Competence assurance [PDF 34kb]

Further guidance
- The guidance is primarily aimed at those responsible for managing, controlling and assessing the competence of individuals and teams in the railway industries. However, this guidance is fully applicable to other high hazard industries, such as the oil & gas, chemicals and nuclear industries. It describes the principles and factors that should be considered to improve existing competence management systems, and set up and implement new systems.
- Competence assessment for the hazardous industries, Research Report 086/2003. Includes a useable format for sites to use for self assessment of their training and competency arrangements
Inspecting Competence

• CMS to include
  – Clearly defined competency requirements at all levels
  – Properly assessed training
  – Monitoring
  – Provisions for sub standard performance
Inspecting Competence

- Demonstrating competence
  - Last trained
  - Last assessed
  - Confidence

- Inspectors Toolkit Core Topic 1
  - Question set
Questions?