



BEHAVIOURAL SAFETY AUDIT & SITE INSPECTION

Highly Intensive, Interactive and Practical Training Course

INTRODUCTION:

This proposal is for the provision of 4-day training course in order to raise the competency of nominated staff in safety audit and inspection procedures. The course is aimed at improving the conduct of safety audits and inspections of processes and facilities, working practices and procedures.

AUDIENCE:

NCMT has assumed that those attending would have a good command of the English language and require this training inline with their current position within their organisation. The course has been prepared for a maximum of 10 managers, supervisors or senior employees.

This course is ideal for either anyone about to undertake a safety inspection and audit or anyone who may, in the course of their duties face such a situation. Alternatively, the course would suit anyone within the company who wishes to understand the principles of audit and inspection of a gas processing plant.

PRIMARY OBJECTIVES FOR COURSE DELEGATES:

The Course Syllabus Will Familiarise Delegates With & Promote An Understanding Of:

- ▶ Types of safety Audit;
- ▶ The tasks required to carry out safety Inspections and audits;
- ▶ Preparation for safety Inspections and audits;
- ▶ Planning for safety Inspection and audit programmes;
- ▶ How to write up reports for safety Inspections and audits; and
- ▶ The importance of the tasks and the sensitivity and uncertainty associated with the tasks.

COURSE OUTLINE:

SAFETY AUDIT

Module 1 Introduction

- ▶ Introduction and Course Administration
- ▶ Types of Safety Audit
- ▶ Principles of Safety Inspection



Module 2 ***The Safety Audit***

- ▶ Safety Management Systems
- ▶ Plant Safety Review
- ▶ Job Safety Analysis
- ▶ Operator review
- ▶ Safety Meetings
- ▶ The Safety Review Committee

Case Study: Modifications at Flixborough without audit

Module 3 ***Types & Time-Scales of Audit***

- ▶ Baseline Audit
- ▶ Management Audit
- ▶ Full Audit
- ▶ Theme Audit
- ▶ Emergency preparedness audit

Module 4 ***Planned Inspections***

- ▶ Types of Inspection
- ▶ Safety Tours
- ▶ General Inspection
- ▶ Housekeeping evaluation

Ten ways to motivate good inspection methods

Dealing with unusual initial catastrophic conditions, the recovery and incident analysis

Module 5 ***Inspection Methods***

- ▶ Area Selection
- ▶ Preparation and checklists
- ▶ Inspection and taking notes
- ▶ Develop remedial Actions
- ▶ Follow-up actions
- ▶ Critical parts inspections
- ▶ Preventative maintenance
- ▶ Condition monitoring
- ▶ Pre use inspections

A case study of a pipeline incident



Module 6 *Project Safety Reviews*

- ▶ Pre-project study
- ▶ Design proposal plant inspection
- ▶ Detailed design review
- ▶ Construction review
- ▶ Pre commissioning
- ▶ Post commissioning

Case studies and identification of fire types

HSE MEASUREMENT THROUGH INSPECTION & AUDIT

Module 8 *Safety Rating*

- ▶ International safety rating system
- ▶ Elements of the system
- ▶ Critique of safety rating systems

Discussion: Safety Rating Index Dow etc.

Module 9 *Maintenance & Inspection*

- ▶ Overview of Maintenance methods
- ▶ Pre-operational inspection
- ▶ In Service Inspection
- ▶ Statutory Inspection
- ▶ Non mandatory inspection
- ▶ PTW systems

Demonstrating the hazards experienced and associated with sour gas

Module 10 *Non-Destructive Testing*

- ▶ Visual examination
- ▶ Radiography
- ▶ Ultrasonics
- ▶ Eddy Current testing
- ▶ Magnetic Particle
- ▶ Liquid penetrant
- ▶ Choice of NDT Methods

Exercise – Pipeline disaster

A case study for loss of containment in a pipeline



Module 11 *Condition Monitoring*

- ▶ Vibration Monitoring
- ▶ Corrosion monitoring
- ▶ Lubricant monitoring
- ▶ Thermal monitoring
- ▶ Selection of condition monitoring methods

This video shows the effort and cost required to clean up a major oil spill

Module 12 *Daily Activities*

- ▶ HSE Inspections
- ▶ HSE Inspections (follow up on Line Supervisor)
- ▶ PTW Audits (Conducting, Analyzing & Presentations)
- ▶ Confined Space Inspection
- ▶ HSE reporting & tracking system
- ▶ Monthly area HSE meetings (ADMA-OPCO)
- ▶ Monthly HSE meetings
- ▶ (SLP Conducting, Follow up on other section)
- ▶ Quarterly HSE meetings (Contractors) and Monthly forum meetings (Contractors)

Module 13 *HSE Management Inspections*

- ▶ Management, Leadership & Commitment
- ▶ Safety
- ▶ Occupational health
- ▶ HSE Policies and procedures
- ▶ Environmental protection
- ▶ Risk management
- ▶ Crisis Management
- ▶ Accident Incident Investigation
- ▶ HSE Training and Competency
- ▶ HSE Assessment and improvement
- ▶ Operations and Maintenance
- ▶ HSE Communication
- ▶ Design and Construction
- ▶ Contractor management



HSE MEASUREMENT THROUGH INSPECTION & AUDIT

Module 14 *Inspection*

- ▶ Why do we inspect
- ▶ How do we inspect
- ▶ How can we improve the process

Discussion: Worst Case Scenarios

Module 15 *Conducting Workplace Inspections*

- ▶ Preparation
- ▶ Conducting the inspection
- ▶ Recording Observations
- ▶ Resource materials
- ▶ Checklists for hazardous materials
- ▶ Recording forms

Module 16 *Hazardous Area Inspection*

- ▶ Area classification
- ▶ Types of protection for hazardous areas
- ▶ Documentation, inspection and test
- ▶ Flameproof enclosures
- ▶ Intrinsically safe installations
- ▶ Pressurised enclosures
- ▶ Other types of protection
- ▶ Maintenance of explosion proof apparatus

Exercise: Texaco case study

A case study for loss of containment in pressure vessels

Module 17 *Inspection & Maintenance Schedules*

- ▶ Initial inspection (hazardous areas)
- ▶ Need for inspection and maintenance
- ▶ Rules for inspection and maintenance
- ▶ Initial and Periodic Inspection
- ▶ Principles of isolation
- ▶ Insulation testing in hazardous areas
- ▶ Fastenings and tools



Module 18 *Safe Isolation of Plant*

- ▶ Self regulation and audit
- ▶ Isolation standards and planning
- ▶ Precautions when breaking containment
- ▶ Risk assessment of Non compliant isolations
- ▶ Isolation for combined space entry
- ▶ Isolation implementation and control
- ▶ Identification and flange tagging
- ▶ Boundary and long term isolations
- ▶ Potential hazards
- ▶ Depressurising and draining
- ▶ Cleaning and gas freeing

Module 19 *Re-Instatement of Plant*

- ▶ De-Isolation of Plant
- ▶ Guidance on leak testing
- ▶ Definition of the pressure envelope
- ▶ Selection of the pressure medium
- ▶ Service Testing
- ▶ Test equipment
- ▶ Crisis Management
- ▶ Planning and preparation
- ▶ Control of leak testing
- ▶ Pressure build up and monitoring
- ▶ Depressurising and return to service
- ▶ Records and certification
- ▶ Post integrity checks
- ▶ Use of special equipment