CORE CONCEPT

Human Factors Engineering in Facility Design Course: Control Rooms, Workplace Layout and ISO 11064

20 – 24 September 2027
London - Central London four-star

Human Factors Engineering in Facility Design Course: Control Rooms, Workplace Layout and ISO 11064

Ref: 2113_30650 **Date:** 20 – 24 September 2027 **Location:** London - Central London four-star **Fees:** 25300 SAR

Introduction:

Human factors engineering in facility design, covering control rooms, workplace layout and ISO 11064, is a 1-week course for project engineering, technical safety and HSE design units, ending with an HFE Integration Plan and Design Verification Checklist for a case plant project. Unreachable valves, crowded consoles and equipment that cannot be removed are cheap to correct on a drawing and costly to correct after start-up. Nominees already review FEED or detailed design deliverables and work through case studies on layouts, 3D model extracts and vendor drawings. CoreConcept Training Center delivers this human factors engineering course.

Course Objectives:

- Define the scope of human factors engineering for a capital project and screen a concept or FEED design for HFE issues
- Apply ISO 11064 principles to control suite arrangement, control room layout and console workstation dimensions
- Specify HMI, display and alarm presentation inputs for control system designers and console vendors
- Set valve operability, equipment access and clearance criteria for plant layout and piping design
- Conduct maintainability reviews of removal routes, lifting provisions and access for inspection
- Verify HFE requirements in 3D model reviews and vendor packages and close out findings before handover

Target Audience:

- Project engineering units that coordinate multidiscipline design deliverables at FEED and detailed design
- Technical safety units that set safety requirements for layout, escape and control buildings
- HSE design units responsible for occupational health, ergonomics and safety input to new facilities
- Plant layout and piping design units that place equipment, valves and access structures
- Control and instrumentation units that specify control rooms, consoles and operator displays

Course Outline:

Day 1: HFE Foundations and Capital Project Context

- Human Factors Engineering Scope Across Capital Project Phases
- Design-Induced Error Lessons From Major Accident Investigations
- HFE Screening Questionnaire for Concept and FEED Stages
- Operator and Maintainer Participation in Design Review Sessions
- Brownfield Operability Walkdown to Record Existing Design Issues

Day 2: ISO 11064 and Control Centre Design Standards

- ISO 11064 Design Principles and Iterative Control Centre Process
- ISO 11064 Control Suite Arrangement and Room Adjacency Planning
- ISO 11064-4 Workstation Layout, Reach and Sightline Dimensions
- EEMUA 201 Console and Operator Display Design Inputs
- EEMUA 191 Alarm Presentation Requirements for HMI Designers

Day 3: Workplace Layout, Equipment Access and Maintainability

- Valve Operability Criteria for Handwheel Height and Orientation
- Access Platforms, Ladders and Equipment Clearance Envelope Rules
- Maintainability Review of Removal Routes and Lifting Points
- Field Labelling, Signage and Local Control Panel Layout
- ISO 11064 Lighting, Acoustic and Thermal Environment Specification

Day 4: HFE Design Verification and Problem Cases

- 3D Model HFE Review at Successive Design Maturity Stages
- Vendor Package HFE Requirements and Drawing Check Routine
- ISO 11064 Evaluation Methods for Control Room Validation
- HFE Issue Register, Close-Out Tracking and Design Deviations
- Recurring HFE Design Failures in Packaged Skids and Modules

Day 5: Case Study on a Plant Project HFE Integration Plan

- Case Plant HFE Screening and Scope Definition Exercise
- Case Control Building Layout Critique Against ISO 11064
- Case 3D Model Extract Valve and Access Review
- Case Vendor Skid Maintainability and Removal Route Assessment
- HFE Integration Plan and Verification Checklist Completion

Skills You Will Gain:

- HFE Screening
- Control Suite Arrangement
- Console Workstation Dimensioning
- Valve Operability Assessment
- Maintainability Review
- 3D Model HFE Review
- Vendor Package HFE Checking

Why Attend This Course:

- Present an HFE Integration Plan and Design Verification Checklist for a case plant to the project engineering manager and technical safety lead
- Decide which HFE requirements enter the design basis, which reviews to schedule and which vendor packages need HFE checks
- Avoid rework after start-up caused by unreachable valves, cramped consoles and equipment without a removal route
- Equip colleagues with the HFE screening questionnaire, valve operability criteria and 3D model review checklist used in class

Conclusion:

Back at work, the participant gives the project engineering manager and the technical safety lead an HFE Integration Plan that sets HFE scope, design criteria, review points and a verification checklist for the project. Design leads use it to brief disciplines and vendors, and the project team uses it to decide when control room and layout reviews take place. After the first model review, the unit should check how many HFE findings were closed in design, which vendor packages lacked HFE input and adjust the plan.

Frequently Asked Questions FAQ:

What should participants know before a human factors engineering in facility design course?

Participants should already take part in FEED or detailed design reviews and be able to read plot plans, layouts and P&IDs. Bringing an anonymised control room layout, 3D model screenshot or vendor drawing lets them apply the review checklists to their own project.

How does human factors engineering in facility design differ from a human error prevention course?

It works at the design stage of new plants and control buildings: control room layout, console dimensions, valve access and maintainability. A human error prevention course looks at operating tasks, procedures and rosters in an existing facility and treats design only briefly.

Why does ISO 11064 matter in human factors engineering in facility design?

ISO 11064 sets ergonomic principles for control centres, from the design process and room arrangement to workstation layout, displays, environment and evaluation. Using it from FEED gives designers and vendors one reference for console and room decisions and a basis for validating the finished control room.

What do participants take back from a human factors engineering in facility design course?

Participants take back an HFE Integration Plan and Design Verification Checklist for a case plant project, with an HFE screening questionnaire, valve operability criteria, a 3D model review checklist and a vendor package HFE check ready to adapt to their own projects.