
Plant Procedure Writing: Task Analysis, Step Design and Field Validation Training Course

26 – 30 July 2027
Cape town





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Programme Summary

Plant procedure writing is the subject of this one-week training course for operations, maintenance and technical-authority leaders, ending in a procedure writing standard and a validated sample procedure. Many plants hold procedures that are long, out of date or written for auditors rather than crews, so people work from memory and habit. The programme moves from the purpose of procedures to diagnosis of weak documents, then to design of steps and controls, and then to application on live tasks. Mars Training Centre UK delivers this programme on plant procedure writing for leaders from mixed process organisations.

The Business Case

Operating and maintenance procedures are the point where plant knowledge meets the person doing the task. When they are unclear, crews improvise, handovers lose detail and errors reach equipment and people. Leaders who set a writing standard, test procedures with the people who use them and control revisions give crews documents they trust, and give assurance teams evidence that critical tasks are done consistently.

- Task Error Rate: Falls as steps are written in plain sequence and tested with real users.
- Handover and Training Time: Reduces as new staff learn from procedures that match the task.
- Audit Findings on Documentation: Decline as procedures are reviewed on a controlled cycle.

Principles and Evidence Base

- Guidelines for Writing Effective Operating and Maintenance Procedures from the Center for Chemical Process Safety: Its guidance on structure, format and review frames the writing standard built in Sessions 1 and 3.
- Human factors principles for task design: They shape the step layout and the use of cautions and warnings in Session 3.
- Best practices for operating procedures and troubleshooting guides presented through AIChE: They inform the validation trials and field walk-throughs in Sessions 2 and 4.

Intended Participants

- Operations leaders who own the procedures their crews use every shift.
- Maintenance managers who issue work instructions for critical equipment.
- Technical authorities who approve and revise controlled documents.
- HSE and training leaders who audit procedures and teach from them.

Typical participants come from refining, petrochemicals, power generation and water utilities.



Learning Outcomes

1. Participants will be able to diagnose weaknesses in existing operating and maintenance procedures.
2. Participants will be able to construct a task analysis that turns a job into an ordered set of actions.
3. Participants will be able to design procedure steps, cautions and warnings that follow human factors principles.
4. Participants will be able to evaluate a procedure through a field walk-through with its users.
5. Participants will be able to justify a revision cycle and change control route for procedures.
6. Participants will be able to prioritise which procedures to rewrite first by task criticality.

Programme Structure

Day 1: Plant Procedure Writing Purpose and Writing Standards

What should a procedure do for the person holding it, and what standard should every procedure meet?

- Procedure Hierarchy and Scope Map
- CCPS Procedure Guidance Review
- Procedure Writing Standard Outline
- Document Control Roles Chart
- Procedure Purpose Statement Sheet

Day 2: Diagnosing Weak Procedures and Task Risk

Where do current procedures fail the people who use them?

- Procedure Quality Scoring Grid
- Incident-to-Procedure Gap Review
- Crew Interview Findings Log
- Task Criticality Ranking Table
- Rewrite Priority List

Day 3: Designing Steps, Format, Cautions and Warnings

How is a task written so that it can be followed correctly under pressure?

- Hierarchical Task Analysis Chart
- Action Verb and One-Action Step Rules
- Human Factors Layout Checklist
- Cautions and Warnings Placement Guide
- Troubleshooting Guide Format



Day 4: Validating Procedures and Controlling Change

How is a procedure proved in the field and kept accurate afterwards?

- Field Walk-Through Protocol
- User Trial Observation Sheet
- Management of Change Link Map
- Controlled Revision Workflow
- Periodic Review Schedule

Day 5: Applying Plant Procedure Writing to Live Tasks

Is the writing standard and sample procedure ready for use in the plant?

- Applying the Session 1 Standard to a Chosen Task
- Scoring the Session 2 Gaps on the Existing Document
- Rewriting Steps with the Session 3 Rules
- Running the Session 4 Walk-Through on the Draft
- Completing the Procedure Writing Standard and Sample Procedure

Methodology

The programme uses a structured exercise method built on anonymised procedures, incident summaries and task descriptions from process and utility plants. Participants score documents, analyse tasks and rewrite steps in small groups, then test each rewrite with a peer who plays the role of crew member. Facilitator feedback is given on every work product before it enters the final standard.

- Suggested activity: Scoring a long existing procedure against the quality grid and listing its three main faults.
- Suggested activity: Breaking a start-up or isolation task into actions and rewriting it as numbered steps.
- Suggested activity: Walking a peer through a draft step by step and recording where they hesitate.

Capstone Output

Each participant completes a procedure writing standard and one validated sample procedure for a live task. The standard holds a hierarchy, format rules, caution and warning rules, a validation protocol and a revision cycle. The sample shows the standard applied. Both are used at work to brief writers, review drafts and train new authors.



Frequently Asked Questions

Is plant procedure writing suitable for leaders who have never written a procedure themselves?

Yes. Plant procedure writing is taught from first principles and assumes responsibility for operations, maintenance or document control, not previous experience as an author.

Which sources does plant procedure writing rest on in this programme?

Plant procedure writing here rests on the Center for Chemical Process Safety guidelines for operating and maintenance procedures, human factors principles and AIChE best practices for procedures and troubleshooting guides.

How is the procedure writing standard from plant procedure writing used at work?

You use the procedure writing standard to brief authors, review drafts against agreed rules and train new writers to a common format.

How does plant procedure writing differ from a programme on technical report writing?

Plant procedure writing centres on step-by-step instructions that crews follow during tasks, while technical report writing centres on explaining findings and analysis to readers.