



Refinery & Petrochemicals Hydrocarbon Mass Balance & Loss Course

This 3-days course will support you not only with developing proper mass balances around your refinery and/or petrochemicals plant, but also to identify losses. This comprehensive course will help you to mitigate your losses with a lot of practical hands-on information. No high-level consultancy speak, but the real thing!

Main Purpose:

- Main objectives of this course are 'getting expertise to minimise hydrocarbon loss in the refinery & petrochemicals business and eventually save money'.
- Receive and understand practical information to abate hydrocarbon losses.

Target Audience (the course will be tuned to the audience):

- Refinery and Petrochemical Plant Managers
- Production Managers
- Oil Movement Managers
- Finance Manager
- Yield Accountants
- Control Engineers
- Maintenance & Instrumentation Engineers
- Laboratory Manager
- Plant Engineers
- Process Engineers and Technologists
- Terminal Operators
- Supply & Trading Managers

Learning Objectives:

- Get a brief introduction to refining and petrochemicals operation (technical and economic).
- Understand the various types, roles and importance of mass balances.
- Appreciate the (monetary) impact of hydrocarbon loss.
- Understand the various types of hydrocarbon losses (physical, paper, accounted, unaccounted).
- How to minimise the physical and paper hydrocarbon losses.
- Understand the impact of ocean loss and how to minimise.
- Appreciate the use of checklists to find potential hydrocarbon losses.
- Understand how Key Performance Indicators can support business improvement.
- Appreciate the need of good governance.
- How to reduce flaring.
- Get acquaintance with practical ideas from refineries worldwide to mitigate hydrocarbon loss.
- Know what supportive information and tools are available.

- Know how to save money after implementation of mitigating actions!

Means:

- Interactive presentations supported with slides which also serves as a dedicated course manual (pdf files).
- Interactive discussions and participant topics (on demand).
- Multiple exercises and a Case Study.
- Q&A Sessions.
- Language of presentations is English. The presentation material is in English.

Learning assessment:

- Optional. Written examination could be developed upon request.

Prerequisites:

- Prior knowledge of refining required. Basic level will do.
- Prior knowledge of petrochemicals would be an advantage.
- No prior knowledge of hydrocarbon mass balance and loss management is required.

Optional:

On demand, this course can be shortened to a 2-day or a 1-day course.

Venue:

This course is offered in-house, public and as Virtual Instructor-Led Training.

PS: What is not in this course:

- Topics around crude oil exploration (wells), transport and depots outside the refinery fence.
- The Chemicals Business beyond the steam cracker with first-line downstream units (such as polymerisation plants for plastics production).
- The solvents, lube-oil, grease, wax and bitumen/asphalt production business.
- Discussion on accounting systems (such as TIS, ERP, OMM, SAP, ...).
- Mass balance software (such as MAB, DataRec, ...)

The author, with over 30 years' experience in the industry, executed multiple projects in refineries and petrochemical plants. Do you want to get your mass balance and loss estimation right and find the losses? Please feel free to contact ppPLUS for details.



Wolff Technical Consultancy

Refinery & Petrochemicals Hydrocarbon Mass Balance & Loss Course Program (3 days)

Day-1

0. Safety & Introduction

- 0.1 Welcome, Safety & In-house arrangements
- 0.2 Introduction of participants (optional)
- 0.3 Program
- 0.4 Course objectives

1. Refinery & Petrochemicals Introduction

- 1.1 Refinery operation
- 1.2 Petrochemicals operation

2. Hydrocarbon Mass Balances

- 2.1 The role of a mass balance
- 2.2 The impact of hydrocarbon loss
- 2.3 Basic refinery mass balance
- 2.4 Reconciled refinery mass balance (incl. exercise)

3. Hydrocarbon Losses

- 3.1 Physical losses
- 3.2 Paper losses
- 3.3 Accounted losses
- 3.4 Unaccounted losses (incl. exercise)

4. Minimising Physical Hydrocarbon Losses

- 4.1 Physical losses mitigating actions
- 4.2 Physical losses checklists

5. Minimising Paper Hydrocarbon Losses

- 5.1 Paper losses mitigating actions
- 5.2 Paper losses checklists

Day-1 (continued)

6. Ocean Loss

- 6.1 What is ocean loss
- 6.2 Minimising ocean loss

7. Targets and Benchmarks

- 7.1 Targets & Benchmarks
- 7.2 How to arrive at Best-in-Class

8. Questions and Answers

Day-2

9. Key Performance Indicators

- 9.1 KPI Introduction
- 9.2 KPI Dashboards

10. Governance

- 10.1 Roles & Responsibilities (incl. exercise)
- 10.2 Reviews Meetings
- 10.3 Auditing

11. Case Study 'Flare reduction'

- 11.1 Introduction
- 11.2 Case Study
- 11.3 Best Practices

12. Questions and Answers

Day-3

13. HM31 Guide Topics

- 13.1 Introduction
- 13.2 Weighing & measuring (incl. exercise)
- 13.3 Loss from process units
- 13.4 Tankage

14. Miscellaneous Topics

- 14.1 Idea lists
- 14.2 Tools

15. Summary & Conclusions

16. Questions and Answers

17. Examination

18. Course Feedback & Certification

Appendices