



Ammonia Production Plant Operation

Course Introduction:

Ammonia Plant Operation – Advanced Training is developed for more experienced operators and can transition field operators to control room operators. Trainees will better understand potential operational upsets and troubleshooting during ammonia plant start-up, routine operation, and emergency shut-down.

This training course combines operation experience with incidents and case studies from ammonia plants and lessons learned and findings during numerous HAZOP and HAZID studies.

Course Objectives:

Upon the successful completion of this course, each participant will be able to:

- Understand the fundamental principles of extraction and its applications in different industries.
- Design and optimize extraction systems based on material properties and process requirements.
- Apply process simulation tools to model extraction systems effectively.
- Identify safety, environmental, and economic considerations in the design of extraction systems.
- Troubleshoot common issues encountered in extraction processes.
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Who Should Attend?

This course is designed for all employees responsible or share responsibility for the ammonia plant operation, plant operators, process engineers, mechanical, maintenance, instrumentation and inspection engineers.

Course Outline:

Module 1

- Natural Gas Desulphurisation
- Natural Gas Compression Unit
 - Start-up of the unit
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation

- e. Shut-down of the unit
- f. Potential incidents during emergency shut-down
- g. Operation mistakes with long term impact

Module 2

- Steam Reforming
- Waste Heat Recovery
 - Start-up of the unit
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation
 - Shut-down of the unit
 - Potential incidents during emergency shut-down
 - Operation mistakes with long term impact

Module 3

- **Process Air Compressor**
- **Secondary Reformer**
 - Start-up of the unit
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation
 - Shut-down of the unit
 - Potential incidents during emergency shut-down
 - Operation mistakes with long term impact

Module 4

- **Shift Conversion**
 - Start-up of the unit
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation
 - Shut-down of the unit
 - Potential incidents during emergency shut-down
 - Operation mistakes with long term impact

Module 5

- **CO2 removal**
- **Start-up of the unit**
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation
 - Shut-down of the unit
 - Potential incidents during emergency shut-down
 - Operation mistakes with long term impact

Module 6

- **Methanation**
- **Start-up of the unit**
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation
 - Shut-down of the unit
 - Potential incidents during emergency shut-down
 - g. Operation mistakes with long term impact

Module 7

- **Syngas Compression Unit**
 - Start-up of the unit
 - Potential incidents during start-up
 - Operation of the unit
 - Potential incidents during routine operation
 - Shut-down of the unit
 - Potential incidents during emergency shut-down
 - Operation mistakes with long term impact

Module 8

- **Ammonia Synthesis Unit**
 - Start-up of the unit
 - Potential incidents during start-up

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session