

■ **Course title:**

# Ammonia Plant Operation - Beginner Training

■ **Introduction:**

Ammonia Plant Operation – Beginner Training aims to introduce the ammonia plants operators and engineers in the operational phases of a typical ammonia plant.

Trainees will understand the preparation of each unit for start-up, normal operation and checks, shut-down and main process upsets and deviations for each unit.

*Duration 14 hours.*

■ **Course outline:**

## Module 1

1. Natural Gas Desulphurisation
2. Natural Gas Compression Unit
  - a. Preparation for start-up
  - b. Start-up of the unit
  - c. Operation of the unit
  - d. Shut-down of the unit
  - e. Operation checks

## Module 2

1. Steam Reforming
2. Waste Heat Recovery
  - a. Preparation for start-up
  - b. Start-up of the unit
  - c. Operation of the unit
  - d. Shut-down of the unit
  - e. Operation checks

## Module 3

1. Process Air Compressor
2. Secondary Reformer
  - a. Preparation for start-up
  - b. Start-up of the unit
  - c. Operation of the unit

Author(s) / Trainer(s):

## Venkat Pattabathula

Ammonia Process Consultant



Venkat Pattabathula has more than 35 years of experience in nitrogen manufacturing industry in various parts of the world such as Asia, North America, and Australia.

Extensive experience in process design and engineering of world scale ammonia/urea projects valued at more than US\$ 600 million engineered by different process licensors and EPC companies.

A Technology Manager experienced in being responsible for economic evaluation and technology selection in plant upgrades and performance guarantees on all ammonia plant related projects.

## Dan Cojocar

Ammonia Process Safety Consultant



Dan has over 20 years of operational, engineering and consultancy experience in ammonia plants and LNG projects.

He started his career as a field operator at ammonia plant and worked his way up being uniquely exposed to Operator, Licensor and EPC worlds on his professional path. His experience in all project phases starting from Concept and Front End Engineering (FEED) through Detailed Design, Commissioning and Operation is extensively enhanced by his Process Safety expertise. All of that brings Dan to founding Fertilizer Industrial Services – the UK based company providing Owner Engineer support to fertilizer companies developing greenfield and revamp projects. The team experience is also shared with operators and engineers worldwide via online training courses of Fertilizer Academy platform, and [ammoniaknowhow.com](http://ammoniaknowhow.com) industry forum.

Dan is a Chartered Chemical Engineer of The Institution of Chemical Engineers (IChemE), a Registered Professional Engineer of Queensland (RPEQ) and senior member of American Institute of Chemical Engineers (AIChE).

- d. Shut-down of the unit
- e. Operation checks

## **Module 4**

### 1 . CO - Shift Conversion

- a. Preparation for start-up
- b. Start-up of the unit
- c. Operation of the unit
- d. Shut-down of the unit
- e. Operation checks

## **Module 5**

### 1. CO<sub>2</sub> removal

- a. Preparation for start-up
- b. Start-up of the unit
- c. Operation of the unit
- d. Shut-down of the unit
- e. Operation checks

## **Module 6**

### 1. Methanation

- a. Preparation for start-up
- b. Start-up of the unit
- c. Operation of the unit
- d. Shut-down of the unit
- e. Operation checks

## **Module 7**

### 1. Syngas Compression Unit

- a. Preparation for start-up
- b. Start-up of the unit
- c. Operation of the unit
- d. Shut-down of the unit
- e. Operation checks

## **Module 8**

### 1. Ammonia Synthesis Unit

- a. Preparation for start-up
- b. Start-up of the unit
- c. Operation of the unit
- d. Shut-down of the unit
- e. Operation checks

## Module 9

1. Ammonia Refrigeration
  - a. Preparation for start-up
  - b. Start-up of the unit
  - c. Operation of the unit
  - d. Shut-down of the unit
  - e. Operation checks

## Module 10

1. Ammonia Recovery
  - a. Preparation for start-up
  - b. Start-up of the unit
  - c. Operation of the unit
  - d. Shut-down of the unit
  - e. Operation checks

## Module 11

1. Steam Generation System
  - a. Preparation for start-up
  - b. Start-up of the unit
  - c. Operation of the unit
  - d. Shut-down of the unit
  - e. Operation checks

### Learning outcomes:

By the end of this training course you will understand:

- What are the preparation conditions for ammonia start-up the ammonia plant
- How to start-up and shut down an ammonia plant
- What are the key process parameters
- What are the major ammonia plant units upsets

### Who will benefit:

Employees responsible or share responsibility for the ammonia plant operation: plant operators, process engineers, mechanical, maintenance, instrumentation and inspection engineers.

### Course materials:

- Hand-out presentation slides in PDF format

■ **Price:**

**€ 1,400**

■ **Discounts:**

- 2 places – 10% discount
- 3 places – 15% discount
- 4 or more places – 20% discount.

■ **In-company training:**

This course is also available as an in-company course (face-to-face or online) where content can be customised to meet your organisation's specific needs and delivered on a date/location that suits your requirements.

[Contact us](#) for more information.

■ **Training code:** AMO03