Furnaces: Startup and Shutdown

**Duration:** 120 mins  
**Level:** Intermediate  
**Pass mark:** 80%

**Course Description:**
This course is designed to familiarize participants with basic procedures for starting up and shutting down a furnace. After completing this course, participants should be able to describe basic procedures for preparing a furnace for start-up, establishing the flow of process fluid, and lighting the burners. They should also be able to describe general considerations and basic procedures associated with planned furnace shutdowns and unplanned, or emergency, furnace shutdowns.

**Learning Objectives:**
- Describe the major operator responsibilities involved in preparing a furnace for startup
- Explain how and why a furnace is purged
- Describe how to establish the flow of process fluid in a furnace
- Describe how to light gas burners, oil burners, and combination burners
- Describe a typical startup procedure for natural draft and balanced draft furnaces
- Describe a typical planned shutdown procedure
- Identify furnace conditions that may require an emergency, or unplanned, shutdown
- Identify typical emergency shutdown systems and equipment

**System requirements:**
- **OS:** Windows 7, 8, 10 / MAC
- **Browsers:** IE11 / Chrome / Firefox / Safari
- **Plug-in:** Flash player
- **Hardware:** Desktop with speakers or headphones
- **Notes:** Not suitable for tablets or smartphones