

ASSE 6040



Medical Gas Systems Maintenance Personnel Course Outline

Summary

The main focus of the ASSE 6040 Medical Gas Maintenance Personnel Course is to provide individuals, who are responsible for the proper maintenance and testing of medical gas systems, with the requirements necessary to maintain and inspect medical gas systems in level 1, 2, & 3 healthcare facilities. The 2005 edition of NFPA 99C is used to provide all code requirements discussed within this course. Attendees will also be given a basic understanding of the application, operation, and code requirements of all materials, components, and equipment that is used in medical gas systems. This is a National ITC Certified Program.

This course is generally classroom based, but there are some sections that take a hands-on approach. The classroom portion provides details on the materials, components, and equipment utilized in medical gas systems. The hands-on portion provides guidance on maintenance and testing techniques used on medical gas systems. There will be a written exam to cover the all material covered in the course.

Prerequisites

Candidates for this course must have a minimum of one (1) year of documented experience in the maintenance of medical gas systems.

Day 1 – (8:00AM – 4:30PM):

- A. Introduction
 - 1.) Instructor & Class Attendees
 - 2.) Purpose and Syllabus
- B. NFPA 99 Standard Review
 - 1.) Healthcare Facility Level Requirements
 - 2.) Medical Gas System Requirements
- C. Personal Safety
 - 1.) Eye Protection
 - 2.) Ear Protection
 - 3.) Chemical and Electrical Gloves
 - 4.) Protective Footwear
 - 5.) Lockout Devices
- D. General Knowledge
 - 1.) Basic Concepts
 - 2.) Terminology
- E. Medical Gas Headers, Manifolds, & Bulk Systems
 - 1.) Application & Components
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA 99 Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair

Day 2 – (8:00AM – 4:30PM):

- A. Medical Air Compressor Systems
 - 1.) Application & Components
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA 99 Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair
- B. Instrument Air Systems
 - 1.) Application & Components
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA 99 Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair
- C. Medical – Surgical Vacuum Systems
 - 1.) Application & Components
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA 99 Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair
- D. Waste Anesthesia Gas Disposal (WAGD) Systems
 - 1.) Application & Components
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA 99 Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair
- E. Valves
 - 1.) Application
 - a.) Source Valves
 - b.) Mainline Valves
 - c.) Emergency Oxygen Supply Connection (EOSC) Valves
 - d.) Riser Valves
 - e.) Zone Valves
 - f.) Service Valves
 - g.) In-Line Valves
 - h.) Future Use Valves
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair
- F. Outlets/Inlets
 - 1.) Application
 - a.) D.I.S.S. (Diameter Index)
 - b.) Chemetron Style (Latch Type)
 - c.) Diamond Style (Pin Index)
 - d.) Puritan Bennett Style (Geometric)
 - e.) Schrader (Quick Disconnect)
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA 99 Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair
- G. Alarms
 - 1.) Application
 - a.) Master Alarms
 - b.) Area Alarms
 - c.) Local Alarms
 - 2.) Basic Operating Principles, Performance Characteristics, & Critical Safety Precautions
 - 3.) NFPA Requirements
 - 4.) Trouble Shooting, Routine Maintenance, & Repair

Day 3 – (8:00AM – 4:30PM):

- A. Labeling and Identification
 - 1.) Pipe Labeling
 - 2.) Shutoff Valves
 - 3.) Alarm Panels

- B. Level 1 Medical Gas Distribution
 - 1.) Medical Gas Piping Material Requirements
 - 2.) Medical – Surgical Vacuum Piping Material Requirements
 - 3.) Fittings
 - 4.) Threaded Joints
 - 5.) Brazed Joints
 - 6.) Installation of Piping & Equipment
 - 7.) Performance Criteria & Verification

- C. Level 2 Medical Gas Distribution

- D. Level 3 Medical Gas Distribution

- E. Testing Procedures
 - 1.) Medical Gas Manifolds
 - 2.) Medical Air Compressor Systems
 - 3.) Valves
 - 4.) Outlets/Inlets
 - 5.) Alarms

- F. Required Testing Tools

- G. Testing Documentation & Records
 - 1.) Daily Testing
 - 2.) Monthly Testing
 - 3.) Quarterly Testing
 - 4.) Semi-Annual Testing
 - 5.) Annual Testing
 - 6.) Periodic Testing
 - 7.) Forms & Details

Day 4 – (8:00AM – 4:30PM):

- A. Wrap-up

- B. Written Exam

Final Course Wrap-up and Class Dismissal