Engineering Technician

The candidates for NICET certification at Level IV in Water-Based Systems Layout should have the knowledge, experience and skills needed to supervise other technicians. Their work includes complex or specialized water-based systems. They have a comprehensive understanding of codes and standards. Level IV technicians have at least 10 years of experience in water-based systems layout.

4.1 Safety and Environmental Compliance
(Questions related to these tasks make up 1-10% of the exam.)
4.1.1 Manage compliance with environmental requirements.
4.1.2 Manage personnel safety.

4.2 Contract Documents
(Questions related to these tasks make up 1-10% of the exam.)
4.2.1 Generate contracts.

4.3 Survey Existing Conditions
(Questions related to these tasks make up 1-10% of the exam.)
4.3.1 Evaluate existing complex fire protection systems.
4.3.2 Plan piping obstruction investigations.

4.4 Codes and Standards
(Questions related to these tasks make up 30-40% of the exam.)
4.4.1 Determine intent of current fire protection codes/standards.
4.4.2 Address conflicts between NFPA standards and FM data sheets.
4.4.3 Address conflicts between new and previous editions of codes/standards.

4.5 System Layout
(Questions related to these tasks make up 35-45% of the exam.)
4.5.1 Layout sprinkler systems with special occupancy requirements (per NFPA 13).
4.5.2 Mitigate corrosion.
4.5.3 Resolve fire pump system issues.
4.5.4 Resolve issues with multiple considerations (e.g., multiple water supplies).
4.5.5 Resolve water supply issues.
4.5.6 Evaluate system hydraulics.
4.5.7 Hydraulically calculate complex systems.
4.5.8 Apply advanced concepts of bracing/restraints.
4.5.9 Coordinate complex interfaces with other fire protection systems.
4.5.10 Incorporate pre-engineered system layouts (e.g., kitchen hood systems).

4.6 Project Management
(Questions related to these tasks make up 5-15% of the exam.)
4.6.1 Oversee management of multiple projects.
4.6.2 Manage subcontractors.
4.6.3 Develop project budgets.
4.6.4 Monitor project progress and manage expenses.
4.6.5 Prepare maintenance plans.