

QUALIFICATIONS AND SCOPE OF SERVICES PROJECT FIRE PROTECTION ENGINEER

DEPARTMENT OF VETERANS AFFAIRS VETERANS HEALTH ADMINISTRATION

June 1, 2021

1. **REQUIREMENTS:** The Architect/Engineer (A/E) shall retain the services of a fire protection engineer (FPE) for the following VA projects:
 - 1.1 All major construction projects.
 - 1.2 All minor construction projects.
 - 1.3 All projects other than major and minor, that include the addition, reconfiguration, or elimination of a fire protection system. Examples of such projects include, but are not limited to, Non-Recurring Maintenance (NRM) and Clinical Specific Initiatives (CSI).
2. **QUALIFICATIONS:** The FPE shall have each of the following qualifications:
 - 2.1 A licensed professional engineer who:
 - A. Has a degree in fire protection engineering, or
 - B. Has passed the principles and practices examination in fire protection engineering, or
 - C. Maintains a current license (P.E.) in fire protection engineering.
 - 2.2 Two years of experience in application and interpretation of National Fire Protection Association (NFPA) Codes and Standards and the model building codes.
 - 2.3 Two years of experience in the design/review of automatic sprinkler and fire alarm systems, including:
 - A. Automatic sprinkler and fire alarm system shop drawings.
 - B. Automatic sprinkler system hydraulic calculations.
 - C. Fire alarm system voltage drop and battery calculations.
 - 2.4 Two years of experience in the application and interpretation of NFPA codes and standards, including, but not limited to, NFPA 1, 3, 4, 10, 13, 14, 17A, 20, 24, 25, 30, 45, 72, 75, 80, 82, 90A, 96, 99, 101, 110, 220, 241 and 2001.
 - 2.5 Two years of experience in the design of health care facilities.
 - 2.6 Two years of experience in acceptance testing of fire protection systems.



- 3. SCOPE:** The FPE shall remain on the A/E's project staff throughout project design and construction. The FPE must be directly responsible for the design of fire protection features, and review of fire protection equipment submittals and shop drawings. In addition, the FPE shall participate in inspections and the final acceptance testing of the fire protection systems. The FPE shall provide to the A/E:
- 3.1 Consultation and review of fire protection and life safety requirements as addressed in the VA Fire Protection Design Manual.
 - 3.2 Preparation of fire protection and life safety design (narrative) analysis report as required by VA Program Guide 18-15 which addresses project compliance with all applicable requirements.
 - 3.3 Preparation of fire protection drawings when required by VA Program Guide 18-15.
 - 3.4 Design of fire alarm and sprinkler systems.
 - 3.5 Review of architectural, electrical, HVAC, plumbing drawings and related documentation during schematics, design development, and construction documents to ensure all fire protection requirements are coordinated between disciplines.
 - 3.6 Attending meetings with the A/E, VA facility and VA Headquarters to discuss the project during schematic, design development and construction document preparation phases.
 - 3.7 Performance of field tests and site visits during the design process to verify the current capacity (flow and pressure) of water supply system based on flow testing of hydrants proximate to the building(s) where automatic sprinkler protection is to be installed, which include consideration of seasonal or daily fluctuations, industrial use demands, and future changes. Documentation shall include a flow curve on hydraulic graph paper.

Note: Consult with public water supply authorities. Flow tests are not necessary if credible tests have been performed and documented within the past 12 months, and it is verified that neither VA facility nor municipal demands will change in the near future.
 - 3.8 Review of fire protection system shop drawings, technical data submitted by contractors, automatic sprinkler system hydraulic calculations, voltage drop calculations, and any other calculations required by NFPA installation standards for compliance with contract documents.
 - 3.9 Interim inspections of job site to verify adequacy of fire protection system installation.
- 4. Fire Protection System Acceptance Testing.** The following shall be provided by the FPE for the project fire protection systems including, but not be limited to, the fire sprinkler



systems, standpipe systems, fire pump systems, water tank systems, fire alarm systems, and gaseous suppression systems.

- 4.1 Review and approval of the fire protection system as-built drawings prepared by the contractor.
- 4.2 Witnessing of the final acceptance testing of installed equipment in accordance with the respective installation standards and contract documents.
- 4.3 Review and approval of the operation and maintenance manuals for each of the fire protection systems.
- 4.4 Review and approval of the certificate of completion forms for fire alarm systems, material and test certificates for sprinkler and piping systems, acceptance test reports for gaseous suppression systems, and any other documentation required by any of the NFPA installation standards.

5. Final Document Delivery. The FPE shall be responsible for:

- 5.1 Delivering a complete package of inspection and testing documentation for each new system to the VA end user that satisfies the inspection, testing, and maintenance requirements of the applicable NFPA installation standards. The documentation shall be organized by building and by system.
- 5.2 Delivering a complete set of Life Safety Assessment (LSA) Drawings for each new building or addition regardless of occupancy to the VA end user that includes the following items:
 - Identification of the NFPA 101 occupancy classification for each floor or area
 - Identification that the building is sprinkler protected throughout or identification of those areas of the building with sprinkler protection (fire extinguisher locations not required).
 - Legend showing features of fire safety
 - Fire barriers with their fire rating
 - Smoke barriers (do not show smoke partitions)
 - Smoke compartment sizes
 - Hazardous Areas (provide crosshatch) (per NFPA 101, 18/19.3.2.1.5 and 20/21.3.2.1)
 - Exits (exit sign locations not required to be shown)
 - Exit discharge locations
 - Healthcare suites, including the type (patient care sleeping, patient care non-sleeping, non-patient care) and suite size (maximum suite size is per current edition of NFPA 101). Note: Suite identification is only to be provided for healthcare occupancies.

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