



Liquefied Petroleum Gas (LP-Gas) System Design Reviews

- §40-82-220 of the SC Code of Laws requires site plan approvals for LP-Gas dealers (including LP vehicular fuel dispensers) and resellers. (2011) National Fire Protection Association (NFPA) 58 4.3.1 and (2012) International Fire Code (IFC) 6101.3 require submission of plans for stationary installations utilizing storage containers of over 2000-gal individual capacity, or with aggregate water capacity exceeding 4000 gal, and all rooftop installations of ASME containers. Other installations generally do not require plan submittal to our office.
- Plans should be done in CAD and submitted either using the electronic project submission portal or on compact disk media in a read-only format (i.e. CD-R). Plans on a CD-R should be accompanied by a cover letter which references the drawing files on the CD by filename, and description of file contents.
- R.71-8300.4(A)(2) requires sufficient information be provided on submitted construction documents to show how compliance with code requirements will be obtained and prohibits codes being cited in whole or part as a substitute for providing specific information.

Construction documents (drawings, specifications, calculations, etc.) submitted for review by the Office of State Fire Marshal must contain (when applicable) the following information:

1. The name and mailing address of the local fire department responsible for responding to calls for this facility.
2. The name and street address of the facility containing the proposed system.
3. The name, address, and telephone number of the owner or owner's representative.
4. The name, addresses, telephone number, and license number of the contractor installing the system.
5. A description of each container used, including size and data plate markings per NFPA 58 5.2.8.3(C).
6. The manufacturer and model number of all components of the storage, filling and dispensing system. Please include the manufacturer's technical information sheets for all components of the propane fuel storage, filling and dispensing system.
7. A scaled drawing (site plan) showing locations of new and existing containers, dispensers, fill connections, piping route between containers and dispensers, piping route between containers and fill connections, pumps, compressors, vaporizers, buildings on the same property, fencing and fence height, property lines (including near and opposite sides of a public way), emergency shutoff valves and switches, vehicle impact protection, fire extinguishers, location of warning signs, location of fire hydrants and vehicle access points.
8. Drawing(s) of piping layout (i.e. schematic) with valve and fitting details, including material type, schedule, size, design/working pressures, joining method, installation method, and (aboveground/underground) corrosion protection.
9. Container and piping support details sufficient to demonstrate compliance with applicable requirements such as NFPA 58 5.2.7.
10. Location of any pumps, compressors, vaporizers, container heaters, vaporizing burners, or gas-air mixers, including make, model, and manufacturers' numbers. Include manufacturer's cut sheets for all components used in the system.
11. Electrical plan showing enough information to verify compliance with applicable electrical requirements in NFPA 58 6.22.2 and Table 6.22.2.2.
12. Details of vehicle impact protection. We accept the guard post design listed in Section 312.2 of the IFC as meeting NFPA 58 8.4.2.2 requirements for adequate collision barriers. Submission of plans and calculations proving other designs meet the design criteria of IFC 312.3 is required if you use another design.
13. Details of hazard identification signs per IFC 5003.5 in accordance with NFPA 704.
14. Completed Fire Safety Analysis (FSA) as required by NFPA 58 6.25.3.2. The FSA must conform to the NPGA/NFPA analysis manual (forms can be obtained at: <http://www.propanesafety.com/compliance/fire-safety-analysis-manual-forms/>).
15. Identification of other protection features or provisions used per NFPA 58 6.25.4, 6.25.5, 6.25.6, and 6.26.
16. Any other information not covered above that is necessary to demonstrate compliance with applicable sections of NFPA 58 related to the system design (such as other requirements in Chapters 5 and 6).