

Recommended Safety Instructions for Natural Gas Winter Switch Protection Devices*

Revised 2025 (4 Pages)

A. Purpose

1. This Manual Part recommends instructions for natural gas (N.G.) systems servicing winter switch protection devices such as hot air blowers, snow melters, and switch heaters. The term "switch heater" will be used herein. They set forth general requirements representing recommended practice.
2. These instructions are predicated on a standard vapor withdrawal application from a natural gas service facility, and it should be recognized that generalized procedures cannot anticipate all situations. Accordingly, in some cases, deviation from these instructions may be necessary to determine safe conditions.
3. In these instructions, "N.G. Service" means the necessary equipment, usually consisting of a shut-off valve and service meter assembly, located on the right-of-way and used to deliver natural gas from the gas supply pipeline to the piping system of the premises served.

B. General Safety Instructions

1. In the interest of safety, all persons employed in handling natural gas shall be trained in proper handling and operating procedures as well as other rules as instructed*.
2. Smoking or providing any source of ignition shall not be permitted in the area where work is being done on or near service equipment, piping, tubing or equipment which contains or has contained natural gas.
3. Before attempting to open any joints in gas supply piping or equipment, first ensure that the system is free of pressure.

C. N.G. Service

1. N.G. Service shall be designed, constructed, installed, and operated in accordance with NFPA 54, National Fuel Gas Code, issued by the National Fire Protection Association, Inc. (NFPA) (ANSI Z223.1); and by any other requirement as specified by the railroad.

* The term "as instructed" as used herein refers to other railroad or purchaser instructions.

2. The normal minimum distance to the nearest point of an N.G. Service from any railway track (gauge side of the nearest rail) should not be less than 12 ft.
3. The minimum distance to the nearest point of an N.G. Service from railway buildings, such as shelters to house switch heater assemblies, railway tool houses, or railway communications and signal enclosures, should not be less than 10 ft.
4. N.G. Service should be enclosed within a suitable protective enclosure.
5. N.G. Service shall be given a careful inspection at the time of installation and at the start of each winter operating season to ensure that it is gas-tight and operational.

(NOTE: N.G. Service on the right-of-way is the responsibility of the serving gas supplier. If in doubt as to the integrity of the Service, or when damage has occurred, the serving gas supplier shall be notified without delay).

6. Service shut-off valve should be kept tightly closed, and where protective enclosures are provided, the enclosure should be kept locked when switch heaters are NOT in regular use. To permit ready access under emergency conditions, protective enclosures should be unlocked whenever switch heaters are in regular use.

(NOTE: In general, gas supplies should be turned ON from 1 November each year to 30 April of the following year. Gas supplies should be turned OFF from 1 May to 31 October each year.)

7. The area within 10 ft. of a N.G. Service should be kept free of debris and combustible materials, other than railway ties that are in place on the track. Grass and weeds within 10 ft. of a N.G. Service should be kept cut to a height not exceeding 6 in.
8. Outdoor pressure regulators shall be designed, installed, or protected so their operation will not be affected by the elements. Outdoor regulator vent opening should be pointed downward, or the regulator should be installed under a protective cover.
9. Outdoor pressure regulators shall be inspected periodically for internal corrosion. Pressure regulators that show evidence of corrosion shall be replaced promptly.

(NOTE 1: To inspect for internal corrosion, it is necessary to close the service shut-off valve and remove the regulator adjusting screw

and main spring assemblies. Look into the spring casing with a flashlight. If there is any evidence of corrosion, the regulator should be replaced. After inspection, the regulator operating pressure should be reset and the switch heater checked for proper operation.)

(NOTE 2: This clause does not apply to regulators forming part of the N.G. Service. Service regulator maintenance is the responsibility of the serving gas supplier.)

10. Pressure regulators should be date-tagged when installed and replaced at 15-year intervals.

D. Gas Piping Systems

1. Above-ground portions of gas supply piping, such as vertical risers at N.G. Service and switch heaters should be protected by suitable guard rails against damage from moving vehicles and other traffic.

(NOTE: Guard rails may be constructed of used wood railway ties installed vertically adjacent to gas supply risers.)

2. Gas pipelines running parallel to a railway track should not be closer than 10 ft. to the gauge side of the nearest rail of that track.
3. Underground pipelines within 20 ft. of the gauge side of the nearest rail of any track should be laid not less than 3 ft. below ground.
4. Gas piping systems shall be tested and proven free of leaks at not less than the normal working pressure at the time of installation and at the start of each winter operating season. A match, candle, flame, or other source of ignition shall not be used to check for leaks.

E. Switch Heaters

1. Switch heaters should be installed conforming to the manufacturer's recommendations, and, in the case of listed or approved equipment, they shall be installed conforming to the listing or approval.
2. Switch heater apparatus installed outside of the track and above ground shall be located outside AREMA or other applicable track clearances or any other requirements as specified by the railroad.
3. Switch heater shall be given a careful inspection at the time of installation and at the start of each winter operating season to ensure the apparatus is in proper condition for service. Switch heaters that do not operate properly are to be promptly repaired.

4. Each gas burner shall be adjusted to its proper input, conforming to the manufacturer's instructions at the time of installation. Overfiring of burners should be prohibited.
5. Switch heaters should be operated for at least 15 min. at the start of each winter operating season and checked to see that the main burner gas is burning properly.
6. Switch heater gas combustion equipment, including burners, combustion chambers, pilots, etc., should be kept clean and should be examined at regular intervals to ensure good condition.
7. When automatic flame safeguards are used, a complete shutdown and restart should be made at the start of each winter operating season to check the components for proper operation.
8. Electric solenoid valves (both main and pilot valves) should be tested and proven gas-tight at the time of installation and at the start of each winter operating season. Gas burners utilizing dual main solenoid valves should be tested using a procedure that ensures that each valve is independently proven to be gas-tight.
9. Accessory safeguard equipment, such as high-temperature limit switches, air flow switches, etc., should be operated at the start of each winter operating season to ensure proper functioning.