DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Staff

Date: 7/26/2024 revised 9/30/2024

Email address: chris.rosival@state.mn.us

Model Code:

Telephone number: 651-284-5510

Code or Rule Section: 1346.5101, 1346. 5301.1, 1346.5401.2

Firm/Association affiliation, if any: DLI-CCLD

Topic of the proposal: Administration

Code or rule section to be changed: MN Mechanical Code 1346.5101 Administration

Intended for Technical Advisory Group ("TAG"):

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☒ change language contained in the model code book? If so, list section(s).
   Administration Chapter MN Mechanical Code

   ☒ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

Subp. 5. Systems, appliances, and equipment outside the scope.
This code shall not apply to the following:
1.Portable LP gas appliances and equipment of all types connected to ~~a fixed fuel piping system~~LP gas containers with a capacity of 100 pounds or less.
2.Installation of farm appliances and equipment such as brooders, dehydrators, dryers, and irrigation equipment.
3.Raw material (feedstock) applications except for piping to special atmosphere generators.
4.Oxygen-fuel gas cutting and welding systems.
5.Industrial gas applications using gases such as acetylene and acetylenic compounds, hydrogen, ammonia, carbon monoxide, oxygen, and nitrogen.
6.Petroleum refineries, pipeline compressor or pumping stations, loading terminals, compounding plants, refinery tank farms, and natural gas processing plants.
7.Integrated chemical plants or portions of such plants where flammable or combustible liquids or gases are produced by, or used in, chemical reactions.
8.LP-gas installations at utility gas plants.
9.Liquefied natural gas (LNG) installations.
10.Fuel gas piping in power and atomic energy plants.
11.Proprietary items of equipment, apparatus, or instruments such as gas-generating sets, compressors, and calorimeters.
12.LP-gas equipment for vaporization, gas mixing, and gas manufacturing.
~~13.Temporary LP-gas piping for buildings under construction or renovation that is not to become part of the permanent piping system.~~
~~14~~13.Installation of LP-gas systems for railroad switch heating.
~~15~~14.Installation of hydrogen gas, LP-gas, and compressed natural gas (CNG) systems on vehicles.
~~16~~15.Except as provided in IFGC Section 401.1.1, gas piping, meters, gas pressure regulators, and other appurtenances used by the serving gas supplier in the distribution of gas, other than undiluted LP-gas.
~~17~~16.Building design and construction, except as specified in this rule.
~~18~~17.Piping systems for mixtures of gas and air within the flammable range with an operating pressure greater than 10 psig (69 kPa gauge).
~~19~~18.Portable fuel cell appliances that are neither connected to a fixed piping system nor interconnected to a power grid.

1346.5301.1 Scope.
This chapter shall govern the approval and installation of all *equipment* and appliances that comprise parts of the installations regulated by this code in accordance with ~~Section 101.2.~~MR 1346.5101. Temporary LP appliances and equipment connected to a LP gas container with a capacity greater than 100 pounds shall comply with MR 1346.5401.2. All temporary LP or natural gas appliances must be listed and labeled, be installed in accordance the terms of the listing, and have combustion air provided from the outdoors sized in accordance with IFGC section 304 or as required in the manufacturer installation instructions.

1346.5401.2 Liquefied petroleum gas storage.
The storage system for liquefied petroleum gas shall be designed and installed in accordance with the *International Fire Code* and NFPA 58. For the purposes of 1346.5301.1, LP gas containers shall not be connected to a common manifold when the temporary LP gas appliances and equipment are connected to LP gas containers with a capacity greater than 100 pounds. When multiple appliances

and equipment used for temporary heat are connected to multiple LP gas containers in any occupancy, the combined capacity of the LP gas containers must not exceed 100 pounds.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   This proposal will provide a safer work environment. Temporary LP gas should not be exempt from meeting code requirements. Worker safety is a very important. A non-code compliant temporary LP gas line and unlisted appliance could create hazardous situations.

2. Why is the proposed code change a reasonable solution?

   This change is as easy way to verify temporary LP gas piping is installed safely.

3. What other factors should the TAG consider?

   A previous incident could have been avoided if temporary LP gas piping system, and listed gas appliances, were required to be installed per code and inspected.

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   The change proposal will have cost increases to contractors, jurisdictions and builders because of the requirements the piping be approved.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

   The increased cost will be offset by worker safety. One accident will cost way more than the increased fees needed code compliant temporary LP gas installation

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

   The building owners will bear the cost for this increase.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   Enforcement costs could be offset by permit fees.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

N/A

Regulatory Analysis

1. What parties or segments of the industry are affected by this proposed code change?

   Building owners, HVAC installers and jurisdictions.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Loss of life and catastrophic building damage from a gas leak.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   Fire code and OSHA requirements

***Note: Incomplete forms may be returned to the submitter with instructions to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Date: September 26, 2024

Email address: jgsmith76@gmail.com

Model Code: 2024 IFGC

Telephone number: 612 867 3145

Code or Rule Section: 304 Combustion Air

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 304 Combustion Air

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☒	☐
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Proposed Language

1. The proposed code change is meant to:

   X☐ change language contained the model code book? If so, list section(s).

   X☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 304.1-304.6.2

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 304.1-304.6.2

   X☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

SECTION 304 (IFGS)—COMBUSTION, VENTILATION AND DILUTION AIR

304.1 General. Where chemicals that generate corrosive or flammable products such as aerosol sprays are routinely used, one of the following shall apply to fired appliances where these chemicals can enter combustion air:

1. Fired appliances shall be located in a mechanical room separate or partitioned off from other areas with provisions for combustion and dilution air from outdoors.
2. The appliances shall be direct vent and installed in accordance with the appliance manufacturer's installation instructions.

304.2 Appliance location. *Appliances* shall be located so as not to interfere with proper circulation of combustion, ventilation and dilution air.

304.3 Draft hood/regulator location. Where used, a draft hood or a barometric draft regulator shall be installed in the same room or enclosure as the *appliance* served to prevent any difference in pressure between the hood or regulator and the *combustion air* supply.

304.4 Makeup air provisions. Where exhaust fans, clothes dryers and kitchen ventilation systems interfere with the operation of *appliances*, makeup air shall be provided.

304.5 Indoor combustion air. The required minimum space volume to provide indoor combustion air resulting from building air infiltration ~~of indoor air~~ shall be determined in accordance with Section 304.5.1 or 304.5.2, except that where the air infiltration rate is known to be less than 0.40 air changes per hour (ACH), Section 304.5.2 shall be used. The total required space volume shall be the sum of the required volume calculated for all *appliances* located within the space. Rooms communicating directly through permanent unobstructed openings with the space in which the *appliances* are installed ~~through openings not furnished with doors~~, and through *combustion air* openings sized and located in accordance with Section 304.5.3, are considered to be part of the required space volume.

304.5.1 Standard method. The minimum required space volume shall be 50 cubic feet per 1,000 Btu/h (4.8 m3/kW) of the *appliance* input rating.

304.5.2 Known air-infiltration-rate method. Where the air infiltration rate of a structure is known, the minimum required space volume to provide the required combustion ~~Air~~ air volume shall be determined as follows:

For *appliances* other than fan-assisted, calculate volume using Equation 3-1.

Equation 3-1 $$\text{Required Volume}_{other} \geq \frac{21\ \text{ft}^3}{ACH}\left(\frac{I_{other}}{1{,}000\ \text{Btu/h}}\right)$$

For fan-assisted appliance, calculate volume using Equation 3-2.

Equation 3-2 $$\text{Required Volume}_{fan} \geq \frac{15\ \text{ft}^3}{ACH}\left(\frac{I_{fan}}{1{,}000\ \text{Btu/h}}\right)$$

where:

I_{other} = All appliances other than fan assisted (input in Btu/h).
I_{fan} = All fan-assisted *appliance* (input in Btu/h).
ACH = Natural Air change rate per hour (percent of volume of space exchanged per hour, expressed as a decimal).
For purposes of this calculation, an infiltration rate greater than 0.60 ACH shall not be used in Equations 3-1 and 3-2.

304.5.3 Indoor opening size and location. Openings used to connect indoor spaces shall be sized and located in accordance with Sections 304.5.3.1 and 304.5.3.2 (see Figure 304.5.3).

304.5.3.1 Combining spaces on the same story. Where combining spaces on the same story, each opening shall have a minimum free area of 1 square inch per 1,000 Btu/h (2200 mm2/kW) of the total input rating of all *appliances* in the space, but not less than 100 square inches (0.06 m2). One permanent opening shall commence within 12 inches (305 mm) of the top and one permanent opening shall commence within 12 inches (305 mm) of the bottom of the enclosure. The minimum dimension of air openings shall be not less than 3 inches (76 mm).

304.5.3.2 Combining spaces in different stories. The volumes of spaces in different stories shall be considered to be communicating spaces where such spaces are connected by one or more permanent openings in doors or floors having a total minimum free area of 2 square inches per 1,000 Btu/h (4402 mm2/kW) of total input rating of all *appliances*.

304.6 Outdoor combustion air. Outdoor *combustion air* shall be provided through opening(s) to the outdoors in accordance with the following: Section 304.6.1 or 304.6.2. The minimum dimension of air openings shall be not less than 3 inches (76 mm)

1. Combustion air for power burner appliances equipped with a draft control device and having an input above 400,000 Btu/hr shall have a net free area of 0.2 square inches per 1,000 Btu/hr. Combustion air shall be provided from a single opening from the outdoors. In lieu of this requirement, combustion air requirements specified by the manufacturer for a specific power burner appliance may be approved by the building official.
2. Combustion air for power burner appliances not equipped with a draft control device and having an input above 400,000 Btu/hr shall have a net free area of 0.1 square inches per 1,000 Btu/hr. Combustion air shall be provided from a single opening from the outdoors. In lieu of this requirement, combustion air requirements specified by the manufacturer for a specific power burner appliance may be approved by the building official.
3. Combustion air for Category I, III, and IV gas-fired appliances shall be determined using Table 304.6.

TABLE 304.6
COMBUSTION AIR REQUIREMENTS FOR CATEGORY I, III, AND IV GAS-FIRED APPLIANCES WHEN THE COMBINED INPUT IS UP TO AND INCLUDING 400,000 BTU/HR

TOTAL INPUT OF APPLIANCES[1],THOUSANDS OF BTU/HR (KW)	REQUIRED FREE AREA OF AIR-SUPPLY OPENING OR DUCT, SQUARE INCHES (SQ MM)	ACCEPTABLE APPROXIMATE ROUND DUCT EQUIVALENT DIAMETER[2], INCH (MM)
25 (8)	7 (4500)	3 (75)
50 (15)	7 (4500)	3 (75)
75 (23)	11 (7000)	4 (100)
100 (30)	14 (9000)	4 (100)
125 (37)	18 (12 000)	5 (125)

150 (45)	22 (14 000)	5 (125)
175 (53)	25 (16 000)	6 (150)
200 (60)	29 (19 000)	6 (150)
225 (68)	32 (21 000)	6 (150)
250 (75)	36 (23 000)	7 (175)
275 (83)	40 (26 000)	7 (175)
300 (90)	43 (28 000)	7 (175)
325 (98)	47 (30 000)	8 (200)
350 (105)	50 (32 000)	8 (200)
375 (113)	54 (35 000)	8 (200)
400 (120)	58 (37 000)	9 (225)

1. For total inputs falling between listed capacities, use next largest listed input.
2. Opening size based on maximum equivalent duct length of 20 feet. For equivalent duct lengths in excess of 20 feet up to and including a maximum of 50 feet increase round duct diameter by one size.
3. If flexible duct is used, increase the duct diameter by one size and stretch with minimal for minimal sags.

304.6.1 Two-permanent-openings method. Two permanent openings, one commencing within 12 inches (305 mm) of the top and one commencing within 12 inches (305 mm) of the bottom of the enclosure, shall be provided. The openings shall communicate directly or by ducts with the outdoors or spaces that freely communicate with the outdoors. Where directly communicating with the outdoors, or where communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of 1 square inch per 4,000 Btu/h (550 mm2/kW) of total input rating of all *appliances* in the enclosure [see Figures 304.6.1(1) and 304.6.1(2)]. Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of not less than 1 square inch per 2,000 Btu/h (1100 mm2/kW) of total input rating of all *appliances* in the enclosure [see Figure 304.6.1(3)].

304.6.2 One-permanent-opening method. One permanent opening, commencing within 12 inches (305 mm) of the top of the enclosure, shall be provided. The *appliance* shall have clearances of not less than 1 inch (25 mm) from the sides and back and 6 inches (152 mm) from the front of the *appliance*. The opening shall directly communicate with the outdoors, or through a vertical or horizontal duct, to the outdoors or spaces that freely communicate with the outdoors (see Figure 304.6.2) and shall have a minimum free area of 1 square inch per 3,000 Btu/h (734 mm2/kW) of the total input rating of all *appliances* located in the enclosure and not less than the sum of the areas of all vent connectors in the space.

304.7 Combination indoor and outdoor combustion air. The use of a combination of indoor and outdoor *combustion air* shall be in accordance with Sections 304.7.1 through 304.7.3.

304.7.1 Indoor openings. Where used, openings connecting the interior spaces shall comply with Section 304.5.3.

304.7.2 Outdoor opening location. Outdoor opening(s) shall be located in accordance with Section 304.6.

304.7.3 Outdoor opening(s) size. The outdoor opening(s) size shall be calculated in accordance with the following:

1. The ~~ratio~~ fraction of combustion air provided through interior spaces shall be the available volume of all communicating spaces divided by the required volume as calculated in Section 304.5.2.

2. The outdoor air fraction of combustion air provided through outdoor combustion air openings ~~The outdoor size reduction factor~~ shall be one minus the ~~ratio~~ fraction of interior spaces.
3. The minimum size of outdoor opening(s) shall be the full size of outdoor opening(s) calculated in accordance with Section 304.6, multiplied by the outdoor air fraction ~~reduction factor.~~ The minimum dimension of air openings shall be not less than 3 inches (76 mm).

304.8 Engineered installations. Engineered *combustion air* installations shall provide an adequate supply of combustion, ventilation and dilution air determined using engineering methods.

304.9 Mechanical combustion air supply. Where all *combustion air* is provided by a mechanical air supply system, the *combustion air* shall be supplied from the outdoors at a rate not less than 0.35 cubic feet per minute per 1,000 Btu/h (0.034 m3/min per kW) of total input rating of all *appliances* located within the space.

1. Boiler and burner manufacturer procedures for sizing combustion air supplies are allowed when approved by the building official.
2. Direct vent appliances obtaining all combustion air from outdoors and flue gases vented to outdoors shall be installed per manufacturer's requirements.

304.9.1 Makeup air. Where exhaust fans are installed, makeup air shall be provided to replace the exhausted air.

304.9.2 Appliance interlock. Each of the *appliances* served shall be interlocked with the mechanical air supply system to prevent main burner operation when the mechanical air supply system is not in operation.

304.9.3 Combined combustion air and ventilation air system. Where *combustion air* is provided by the building's mechanical ventilation system, the system shall provide the specified *combustion air* rate in addition to the required ventilation air.

304.10 Louvers and grilles. The required size of openings for combustion, ventilation and dilution air shall be based on the net free area of each opening. Where the free area through a design of louver, grille or screen is known, it shall be used in calculating the size opening required to provide the free area specified. Where the design and free area of louvers and grilles are not known, it shall be assumed that wood louvers will have 25-percent free area and metal louvers and grilles will have ~~75~~ 50 percent free area. Screens shall have a mesh size not smaller than 1/4 inch (6.4 mm). Nonmotorized louvers and grilles shall be fixed in the open position. Motorized louvers shall be interlocked with the *appliance* so that they are proven to be in the full open position prior to main burner ignition and during main burner operation. Means shall be provided to prevent the main burner from igniting if the louvers fail to open during burner start-up and to shut down the main burner if the louvers close during operation.

304.11 Combustion air ducts. *Combustion air* ducts shall comply with all of the following:

1. ~~Ducts shall be constructed of galvanized steel complying with Chapter 6 of the *International Mechanical Code* or of a material having equivalent corrosion resistance, strength and rigidity.~~

~~**Exception:** Within dwellings units, unobstructed stud and joist spaces shall not be prohibited from conveying *combustion air* , provided that not more than one required fireblock is removed~~.

Ducts shall be of galvanized steel or an equivalent corrosion-resistant material. If flexible duct is used, increase the duct diameter by one size. Flexible duct shall be stretched with minimal sags.

2. Ducts shall terminate in an unobstructed space allowing free movement of *combustion air* to the *appliances*.
3. Ducts shall serve a single enclosure.
4. Ducts shall not be combined to serve both upper and lower *combustion air* openings where both such openings are used. The separation between ducts serving upper and lower *combustion air* openings shall be maintained to the source of *combustion air*.
5. Ducts shall not terminate in an attic space or crawl space. ~~be screened where terminating in an attic space.~~
6. Horizontal upper *combustion air* ducts shall not slope downward toward the source of *combustion air*.

7. The remaining space surrounding a chimney liner, gas vent, special gas vent or plastic *piping* installed within a masonry, metal or factory-built chimney shall not be used to supply *combustion air*.
Exception: Direct-vent gas-fired *appliances* designed for installation in a solid fuel burning *fireplace* where installed in accordance with the manufacturer's instructions.
8. *Combustion air* intake openings located on the exterior of a building shall have the lowest side of such openings located not less than 12 inches (305 mm) vertically from the adjoining finished ground level.
304.12 Protection from fumes and gases. Where chemicals that generate corrosive or flammable products such as aerosol sprays are routinely used, one of the following shall apply to fired *appliances* where these chemicals can enter combustion air:
1. Fired appliances shall be located in a mechanical room separate or partitioned off from other areas with provisions for combustion and dilution air from outdoors.
2. The appliances shall be direct vent and installed in accordance with the appliance manufacturer's installation instructions.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   It helps to clarifiy combustion air opening requirements. Combustion air design requirements are based on a review of NFPA 54, AGA, ASHRAE, CSA B149.1-10, NB-132, existing MN code and several equipment manufacturer recommendations.

2. Why is the proposed code change a reasonable solution? It further clarifies requirements which are in the 2020 MN IFGC code and provides simpler information to contractors who may need the information.

3. What other factors should the TAG consider?

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   No changes.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

Should make compliance and enforcement more uniform and easier to achieve.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Owners, contractors, building officials.
   Owners, contractorts, design engineers, building code officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Confusion and inconsistency in the design of combustion air requirements. Proposed solutions may be different than what would be required by code officials.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No

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DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Staff

Date: September 30, 2024

Email address: chris.rosival@state.mn.us

Model Code: 2024 IFGC

Telephone number: 612 867 3145

Code or Rule Section: 304 Combustion Air

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 304 Combustion Air

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
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F. Would this proposed change be appropriate through the ICC code development process?	☐	☒

Proposed Language

1. The proposed code change is meant to:

   ☒ change language contained the model code book? If so, list section(s).
   IFGC 304.1

   ☒ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 304.1-304.6.2

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 304.1-304.6.2

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
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3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

SECTION 304 (IFGS)—COMBUSTION, VENTILATION AND DILUTION AIR

304.1 General. ~~Where chemicals that generate corrosive or flammable products such as aerosol sprays are routinely used, one of the following shall apply to fired appliances where these chemicals can enter combustion air:~~

~~1. Fired appliances shall be located in a mechanical room separate or partitioned off from other areas with provisions for combustion and dilution air from outdoors.~~

~~2. The appliances shall be direct vent and installed in accordance with the appliance manufacturer's installation instructions.~~The requirements for combustion, ventilation and dilution air shall be provided as required in this section.

304.2 Appliance location. *Appliances* shall be located so as not to interfere with proper circulation of combustion, ventilation and dilution air.

304.3 Draft hood/regulator location. Where used, a draft hood or a barometric draft regulator shall be installed in the same room or enclosure as the *appliance* served to prevent any difference in pressure between the hood or regulator and the *combustion air* supply.

304.4 Makeup air provisions. Where exhaust fans, clothes dryers and kitchen ventilation systems interfere with the operation of *appliances*, makeup air shall be provided.

304.5 Indoor combustion air. The required volume of the space to provide indoor combustion air from infiltration ~~of indoor air~~ shall be determined in accordance with Section 304.5.1 or 304.5.2, except that where the air infiltration rate is known to be less than 0.40 air changes per hour (ACH), Section 304.5.2 shall be used. The total required volume shall be the sum of the required volume calculated for all *appliances* located within the space. Rooms communicating directly with the space in which the *appliances* are installed through openings not furnished with doors, and through *combustion air* openings sized and located in accordance with Section 304.5.3, are considered to be part of the required volume.

304.5.1 Standard method. The minimum required volume shall be 50 cubic feet per 1,000 Btu/h (4.8 m3/kW) of the *appliance* input rating.

304.5.2 Known air-infiltration-rate method. Where the air infiltration rate of a structure is known, the minimum required volume shall be determined as follows:

For *appliances* other than fan-assisted, calculate volume using Equation 3-1.

Equation 3-1 $$Required\ Volume_{other} \geq \frac{21\ ft^3}{ACH}\left(\frac{I_{other}}{1{,}000\ Btu/h}\right)$$

For fan-assisted appliance, calculate volume using Equation 3-2.

Equation 3-2 $$Required\ Volume_{fan} \geq \frac{15\ ft^3}{ACH}\left(\frac{I_{fan}}{1{,}000\ Btu/h}\right)$$

where:

I_{other} = All appliances other than fan assisted (input in Btu/h).
I_{fan} = All fan-assisted *appliance* (input in Btu/h).
ACH = Air change per hour (percent of volume of space exchanged per hour, expressed as a decimal). For purposes of this calculation, an infiltration rate greater than 0.60 ACH shall not be used in Equations 3-1 and 3-2.

304.5.3 Indoor opening size and location. Openings used to connect indoor spaces shall be sized and located in accordance with Sections 304.5.3.1 and 304.5.3.2 (see Figure 304.5.3).

304.5.3.1 Combining spaces on the same story. Where combining spaces on the same story, each opening shall have a minimum free area of 1 square inch per 1,000 Btu/h (2200 mm2/kW) of the total input rating of all *appliances* in the space, but not less than 100 square inches (0.06 m2). One permanent opening shall commence within 12 inches (305 mm) of the top and one permanent opening shall commence within 12 inches (305 mm) of the bottom of the enclosure. The minimum dimension of air openings shall be not less than 3 inches (76 mm).

304.5.3.2 Combining spaces in different stories. The volumes of spaces in different stories shall be considered to be communicating spaces where such spaces are connected by one or more permanent openings in doors or floors having a total minimum free area of 2 square inches per 1,000 Btu/h (4402 mm2/kW) of total input rating of all *appliances*.

304.6 Outdoor combustion air. Outdoor *combustion air* shall be provided through opening(s) to the outdoors in accordance with the following: ~~Section 304.6.1 or 304.6.2. The minimum dimension of air openings shall be not less than 3 inches (76 mm)~~

1. Combustion air for power burner appliances equipped with a draft control device and having an input above 400,000 Btu/hr shall have a net free area of 0.2 square inches per 1,000 Btu/hr. Combustion air shall be provided from a single opening from the outdoors. In lieu of this requirement, combustion air requirements specified by the manufacturer for a specific power burner appliance may be approved by the building official.
2. Combustion air for power burner appliances not equipped with a draft control device and having an input above 400,000 Btu/hr shall have a net free area of 0.1 square inches per 1,000 Btu/hr. Combustion air shall be provided from a single opening from the outdoors. In lieu of this requirement, combustion air requirements specified by the manufacturer for a specific power burner appliance may be approved by the building official.
3. Combustion air for Category I, III, and IV gas-fired appliances when the combined input is up to and including 400,000 Btu/hr shall be determined using Table 304.6.

Exception: Boilers regulated by Minnesota Rules Chapter 5225 are exempt from combustion air requirements as referenced in Minnesota Rules Chapter 1346.

TABLE 304.6
COMBUSTION AIR REQUIREMENTS FOR CATEGORY I, III, AND IV GAS-FIRED APPLIANCES WHEN THE COMBINED INPUT IS UP TO AND INCLUDING 400,000 BTU/HR

TOTAL INPUT OF APPLIANCES[1],THOUSANDS OF BTU/HR (KW)	REQUIRED FREE AREA OF AIR-SUPPLY OPENING OR DUCT, SQUARE INCHES (SQ MM)	ACCEPTABLE APPROXIMATE ROUND DUCT EQUIVALENT DIAMETER[2], INCH (MM)
25 (8)	7 (4500)	3 (75)
50 (15)	7 (4500)	3 (75)
75 (23)	11 (7000)	4 (100)

100 (30)	14 (9000)	4 (100)
125 (37)	18 (12 000)	5 (125)
150 (45)	22 (14 000)	5 (125)
175 (53)	25 (16 000)	6 (150)
200 (60)	29 (19 000)	6 (150)
225 (68)	32 (21 000)	6 (150)
250 (75)	36 (23 000)	7 (175)
275 (83)	40 (26 000)	7 (175)
300 (90)	43 (28 000)	7 (175)
325 (98)	47 (30 000)	8 (200)
350 (105)	50 (32 000)	8 (200)
375 (113)	54 (35 000)	8 (200)
400 (120)	58 (37 000)	9 (225)

1. For total inputs falling between listed capacities, use next largest listed input.
2. Opening size based on maximum equivalent duct length of 20 feet. For equivalent duct lengths in excess of 20 feet up to and including a maximum of 50 feet increase round duct diameter by one size.
3. If flexible duct is used, increase the duct diameter by one size and stretch with minimal sags.

~~**304.6.1 Two-permanent-openings method.** Two permanent openings, one commencing within 12 inches (305 mm) of the top and one commencing within 12 inches (305 mm) of the bottom of the enclosure, shall be provided. The openings shall communicate directly or by ducts with the outdoors or spaces that freely communicate with the outdoors. Where directly communicating with the outdoors, or where communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of 1 square inch per 4,000 Btu/h (550 mm2/kW) of total input rating of all *appliances* in the enclosure [see Figures 304.6.1(1) and 304.6.1(2)]. Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of not less than 1 square inch per 2,000 Btu/h (1100 mm2/kW) of total input rating of all *appliances* in the enclosure [see Figure 304.6.1(3)].~~

~~**304.6.2 One-permanent-opening method.** One permanent opening, commencing within 12 inches (305 mm) of the top of the enclosure, shall be provided. The *appliance* shall have clearances of not less than 1 inch (25 mm) from the sides and back and 6 inches (152 mm) from the front of the *appliance*. The opening shall directly communicate with the outdoors, or through a vertical or horizontal duct, to the outdoors or spaces that freely communicate with the outdoors (see Figure 304.6.2) and shall have a minimum free area of 1 square inch per 3,000 Btu/h (734 mm2/kW) of the total input rating of all *appliances* located in the enclosure and not less than the sum of the areas of all vent connectors in the space.~~

304.7 Combination indoor and outdoor combustion air. The use of a combination of indoor and outdoor *combustion air* shall be in accordance with Sections 304.7.1 through 304.7.3.

304.7.1 Indoor openings. Where used, openings connecting the interior spaces shall comply with Section 304.5.3.

304.7.2 Outdoor opening location. Outdoor opening(s) shall be located in accordance with Section 304.6.

304.7.3 Outdoor opening(s) size. The outdoor opening(s) size shall be calculated in accordance with the following:

1. The ratio of combustion air provided through interior spaces shall be the available volume of all communicating spaces divided by the required volume as calculated in Section 304.5.2.
2. The outdoor air fraction of combustion air provided through outdoor combustion air openings ~~The outdoor size reduction factor~~ shall be one minus the ratio of interior spaces.
3. The minimum size of outdoor opening(s) shall be the full size of outdoor opening(s) calculated in accordance with Section 304.6, multiplied by the reduction factor. The minimum dimension of air openings shall be not less than 3 inches (76 mm).

304.8 Engineered installations. Engineered *combustion air* installations shall provide an adequate supply of combustion, ventilation and dilution air determined using engineering methods.

304.9 Mechanical combustion air supply. Where all *combustion air* is provided by a mechanical air supply system, the *combustion air* shall be supplied from the outdoors at a rate not less than 0.35 cubic feet per minute per 1,000 Btu/h (0.034 m3/min per kW) of total input rating of all *appliances* located within the space.

Exception: Manufacturers installation instructions for sizing combustion air is allowed.

304.9.1 Makeup air. Where exhaust fans are installed, makeup air shall be provided to replace the exhausted air.

304.9.2 Appliance interlock. Each of the *appliances* served shall be interlocked with the mechanical air supply system to prevent main burner operation when the mechanical air supply system is not in operation.

304.9.3 Combined combustion air and ventilation air system. Where *combustion air* is provided by the building's mechanical ventilation system, the system shall provide the specified *combustion air* rate in addition to the required ventilation air.

304.10 Louvers and grilles. The required size of openings for combustion, ventilation and dilution air shall be based on the net free area of each opening. Where the free area through a design of louver, grille or screen is known, it shall be used in calculating the size opening required to provide the free area specified. Where the design and free area of louvers and grilles are not known, it shall be assumed that wood louvers will have 25-percent free area and metal louvers and grilles will have ~~75~~ 50 percent free area. Screens shall have a mesh size not smaller than 1/4 inch (6.4 mm). Nonmotorized louvers and grilles shall be fixed in the open position. Motorized louvers shall be interlocked with the *appliance* so that they are proven to be in the full open position prior to main burner ignition and during main burner operation. Means shall be provided to prevent the main burner from igniting if the louvers fail to open during burner start-up and to shut down the main burner if the louvers close during operation.

304.11 Combustion air ducts. *Combustion air* ducts shall comply with all of the following:
1. ~~Ducts shall be constructed of galvanized steel complying with Chapter 6 of the *International Mechanical Code* or of a material having equivalent corrosion resistance, strength and rigidity.~~
~~**Exception:** Within dwellings units, unobstructed stud and joist spaces shall not be prohibited from conveying *combustion air* , provided that not more than one required fireblock is removed~~.
Ducts shall be of galvanized steel or an equivalent corrosion-resistant material. If flexible duct is used, increase the duct diameter by one size and stretch with minimal sags.
2. Ducts shall terminate in an unobstructed space allowing free movement of *combustion air* to the *appliances*.
3. Ducts shall serve a single enclosure.
4. Ducts shall not be combined to serve both upper and lower *combustion air* openings where both such openings are used. The separation between ducts serving upper and lower *combustion air* openings shall be maintained to the source of *combustion air.*
5. Ducts shall not terminate in an attic space or crawl space. ~~be screened where terminating in an attic space.~~

6. Horizontal upper *combustion air* ducts shall not slope downward toward the source of *combustion air*.
7. The remaining space surrounding a chimney liner, gas vent, special gas vent or plastic *piping* installed within a masonry, metal or factory-built chimney shall not be used to supply *combustion air*.
Exception: Direct-vent gas-fired *appliances* designed for installation in a solid fuel burning *fireplace* where installed in accordance with the manufacturer's instructions.
8. *Combustion air* intake openings located on the exterior of a building shall have the lowest side of such openings located not less than 12 inches (305 mm) vertically from the adjoining finished ground level.
304.12 Protection from fumes and gases. Where chemicals that generate corrosive or flammable products such as aerosol sprays are routinely used, one of the following shall apply to fired *appliances* where these chemicals can enter combustion air:
1. Fired appliances shall be located in a mechanical room separate or partitioned off from other areas with provisions for combustion and dilution air from outdoors.
2. The appliances shall be direct vent and installed in accordance with the appliance manufacturer's installation instructions.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   It helps to clarifiy combustion air opening requirements. Combustion air design requirements are based on a review of NFPA 54, AGA, ASHRAE, CSA B149.1-10, NB-132, existing MN code and several equipment manufacturer recommendations.

2. Why is the proposed code change a reasonable solution? It further clarifies requirements which are in the 2020 MN IFGC code and provides simpler information to contractors who may need the information.

3. What other factors should the TAG consider?

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   No changes.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

Should make compliance and enforcement more uniform and easier to achieve.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Owners, contractors, building officials.
   Owners, contractorts, design engineers, building code officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Confusion and inconsistency in the design of combustion air requirements. Proposed solutions may be different than what would be required by code officials.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Email address: jgsmith76@gmail.com

Telephone number: 612 867 3145

Firm/Association affiliation, if any: ACEC

Date: September 24, 2024

Model Code: 2024 IFGC

Code or Rule Section 409 IFGC

Code or rule section to be changed: Section 409 (IFGC) Shut off valves

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   X☐ change language contained the model code book? If so, list section(s).

   X☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 409.1.3 through 409.3.1

   ☐ delete language contained in the model code book? If so, list section(s).

   X☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 409.1.3 through 409.3.1

   X☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   The following proposed changes modify the IFGC as well as existing ammendments to the 2020 MN IFGC. I have included sections which are not changed to better review how the entire section reads.

409.1.2 Prohibited locations.
Shutoff valves shall be prohibited in *concealed locations* and *furnace plenums*.

409.1.3 Access to shutoff valves.
Shutoff valves shall be located in places so as to provide *access* for ease of operation and shall be installed so as to be protected from damage.

409.1.4 Main shutoff valve.
Piping systems entering the building shall be provided with an approved main shutoff valve before the first branch takeoff and installed in the first available location inside the building 5 feet or less above the floor that provides ready access and shall have a permanently attached handle.

Exception: Gas piping that serves an appliance on the roof of a building shall have the shutoff valve installed on the roof, ten feet or more from the roof's edge, before the first branch line.

409.2 Meter valve.
Every *meter* shall be equipped with a shutoff valve located on the supply side of the *meter*.

409.3 Shutoff valves for multiple-house line systems.
Where a single *meter* is used to supply gas to more than one building or tenant, a separate shutoff valve shall be provided for each building or tenant.

409.3.1 Multiple tenant buildings.
In multiple-tenant buildings, where a common *piping* system is installed to supply other than one- and two-family dwellings, shutoff valves shall be provided for each tenant. Each tenant shall have access to the shutoff valve serving that tenant's space. A main shutoff valve shall be installed in a common utility room or otherwise located to provide ready access to all tenants of the building, and it shall not be located in a locked room without prior permission from the building official.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   The proposed changes clarify/simplify existing 2020 MN IFGC language as well as incorporate information which is felt to be important in fuel gas installations.

2. Why is the proposed code change a reasonable solution?

It clarifies and simplifies existing Minnesota amendment language, and maintains features of fuel gas systems which are felt to be important in Minnesota.

3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   No changes

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   None. Should make the code requirements more clear and as a result more enforceable.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Owners, contractors, building officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?
   Confusion of what the requirements are for gas piping valving.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   No

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Staff

Email address: chris.rosival@state.mn.us

Telephone number: 651-284-5510

Firm/Association affiliation, if any: DLI-CCLD

Date: September 30, 2024

Model Code: 2024 IFGC

Code or Rule Section 409 IFGC

Code or rule section to be changed: Section 409 (IFGC) Shut off valves

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☐ change language contained the model code book? If so, list section(s).

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   ☒ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MN Rules 1346 409.1.4 through 409.3.1

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   The following proposed removes the existing Minnesota amendment. Code change proposal will revert to model code language.

~~**409.1.4 Main shutoff valve.**~~
~~Piping systems shall be provided with an approved main shutoff valve before the first branch line. The main shutoff valve shall be installed in the first available location inside the building 5 feet or less above the floor that provides ready access and shall have a permanently attached handle.~~

~~**Exception:** Gas piping that serves an appliance on the roof of a building shall have the shutoff valve installed on the roof, ten feet or more from the roof's edge, before the first branch line.~~

~~Main shutoff valves controlling several gas piping systems shall be protected from physical damage and shall be placed an adequate distance from each other so they will be easy to operate.~~

~~**409.2 Meter valve.**~~
~~Every meter shall be equipped with a shutoff valve located on the side of the meter that supplies gas to the building piping system. The main shutoff valve required in Section 409.1.4 shall serve as the shutoff valve.~~
~~**409.3 Shutoff valves for multiple-house line systems.**~~
~~Where a single meter is used to supply gas to more than one building or tenant, a separate shutoff valve shall be provided for each building or tenant.~~

~~**409.3.1 Multiple tenant buildings.**~~
~~In multiple-tenant buildings, where a common *piping* system is installed to supply other than one- and two-family dwellings, shutoff valves shall be provided for each tenant. Each tenant shall have access to the shutoff valve serving that tenant's space. A main shutoff valve shall be installed in a common utility room or otherwise located to provide ready access to all tenants of the building, and it shall not be located in a locked room without prior permission from the building official.~~

409.2 Meter valve. Every *meter* shall be equipped with a shutoff valve located on the supply side of the *meter*.
409.3 Shutoff valves for multiple-house line systems. Where a single *meter* is used to supply gas to more than one building or tenant, a separate shutoff valve shall be provided for each building or tenant.
409.3.1 Multiple-tenant buildings. In multiple-tenant buildings, where a common *piping* system is installed to supply other than one- and two-family dwellings, shutoff valves shall be provided for each tenant. Each tenant shall have access to the shutoff valve serving that tenant's space.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   The model code language simplifies the requirements for valves.

2. Why is the proposed code change a reasonable solution?

   The Minnesota amendment created an undue burden for locations of valves inside a building where the gas piping did not enter the building, gas valves on roofs, and an accessible gas valve for multi-tenant buildings that could be tampered with by individuals that have no need to operate the valves.

3. What other factors should the TAG consider?

   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   Decrease costs.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   None. Should make the code requirements more clear and as a result more enforceable.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?

   Owners, contractors, building officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

Reduces confusion of what the requirements are for gas piping valving.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.