

F202-18

IFC: SECTION 1205, 1205.1, 1205.5, 1205.14 (New)

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA
(rjd@davidsoncodeconcepts.com)

2018 International Fire Code

SECTION 1205 STATIONARY FUEL CELL POWER SYSTEMS

APPROVED

Revise as follows:

1205.1 General. *Stationary fuel cell power systems* in new and existing occupancies shall comply with this section.

Exception: The temporary use of a fuel cell powered electric vehicle to power a Group R-3 or R-4 building while parked shall comply with Section 1205.14.

1205.5 Residential use. *Stationary fuel cell power systems* shall not be installed in Group R-3 and R-4 buildings, or dwelling units associated with Group R-2 buildings unless they are specifically listed for residential use.

Exception: The temporary use of a fuel cell powered electric vehicle to power a Group R-3 or R-4 building while parked shall comply with Section 1205.14.

Add new text as follows:

1205.14 Group R-3 and R-4 Fuel Cell Vehicle ESS Use. The temporary use of the dwelling unit owner or occupant's fuel cell powered electric vehicle to power a Group R-3 or R-4 dwelling while parked in an attached or detached garage or outside shall comply with the vehicle manufacturer's instructions and NFPA 70.

Reason:

This proposal is intended to provide correlation with proposals updating the energy storage system provisions in Section 1206 and work being done with the initial NFPA 855 Energy Storage Systems Standard.

Both the current draft of NFPA 855 and an updated proposal to Section 1206 will provide exceptions from the ESS language for temporary use of electric vehicles, (a fuel cell powered vehicle is an electric vehicle), to power R-3 or R-4 dwellings. The NFPA 855 language would also include IRC one- and two-family homes and townhouses.

The conditions are that the vehicles belong to an owner or occupant of the unit, not a third party. Third party applications of mobile ESS is proposed to be separately regulated by NFPA 855 and the IFC.

Additionally the use must comply with the vehicle manufacturer's instructions and NFPA 70 to provide for an appropriate level of safety. The vehicle manufacturer's information covers the approved electric connection on the vehicle itself in accordance with federal standards and NFPA 70 covers the necessary requirements for the electrical connections to the dwelling.

Vehicles capable of being used in this manner already have been marketed. It is more than a convenience issue, in times of natural disasters with associated power outages the ability to utilize the energy provided by the owner/occupants personal vehicle could be critical.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The added language will not change the cost of construction. Use of personal vehicles in this manner are optional and any necessary electrical equipment would be required regardless of what standby power method was utilized to power a building.

Internal ID: 1585

APPROVED

F216-18

IFC: 2309.1

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com); Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (RJD@davidsoncodeconcepts.com)

2018 International Fire Code

2309.1 General. Hydrogen motor fuel-dispensing and generation facilities shall be in accordance with this section, ~~and Chapter 58,~~ and NFPA 2. Where a fuel-dispensing facility includes a repair garage, the repair operation shall comply with Section 2311.

Reason:

Adding a reference to NFPA 2 Hydrogen Technologies Code to the general requirements for dispensing and generation will provide additional coordination with the detailed requirements for hydrogen dispensing and generating systems developed by the Hydrogen Technologies Code Technical Committee.

Bibliography:

<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=2>

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The requirements in NFPA 2 are standard for the hydrogen industry and are already implemented at dispensing and generating facilities.

Internal ID: 1334

F217-18

IFC: 2309.2.2, 2309.4

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com); Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (RJD@davidsoncodeconcepts.com)

2018 International Fire Code

Revise as follows:

2309.2.2 Listed or approved equipment. Hoses, hose connections, compressors, hydrogen generators, dispensers, motor-fueling connections and electrical equipment used for hydrogen shall be *listed or approved for use with hydrogen*. ~~Hydrogen motor-fueling connections shall be listed and labeled or approved for use with hydrogen.~~

2309.4 Dispensing into motor vehicles at self-service hydrogen motor fuel-dispensing facilities. Self-service hydrogen motor fuel-dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted fuel containers on hydrogen-powered vehicles.

In addition to the requirements in Section 2311, the *owner* of a self-service hydrogen motor fuel-dispensing facility shall provide for the safe operation of the system by complying with this code and the fueling protocols in NFPA 2 and through the institution of a fire safety plan submitted in accordance with Section 404, the training of employees and operators who use and maintain the system in accordance with Section 406, and provisions for hazard communication in accordance with Section 407.

Reason:

The proposed makes two simple modifications.

Section 2309.2.2 is restructured. By pulling "motor-fueling connections into the first sentence there is no need for the second sentence.

Section 2309.4 is modified by adding a pointer to fueling protocols that are in NFPA 2. These protocols need to be referenced to provide for the "safe operation of the system".

Bibliography:

<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=2>

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

Requirements in NFPA2 are already used by manufacturers of hydrogen dispensing and generating facilities.

Internal ID: 1336

F218-18

IFC: 2309.4

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com); Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (RJD@davidsoncodeconcepts.com)

2018 International Fire Code

APPROVED

Revise as follows:

2309.4 Dispensing into motor vehicles at self-service hydrogen motor fuel-dispensing facilities. ~~Self-service hydrogen~~ Hydrogen motor fuel-dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted fuel containers on hydrogen-powered vehicles.

In addition to the requirements in Section 2311, the *owner* of a ~~self-service~~ hydrogen motor fuel-dispensing facility shall provide for the safe operation of the system through the institution of a fire safety plan submitted in accordance with Section 404, the training of employees and operators who use and maintain the system in accordance with Section 406, and provisions for hazard communication in accordance with Section 407.

Reason:

When the requirements for hydrogen motor-fueling were added to the code dispensing stations were experimental and use of the systems to fuel motor vehicle was restricted and controlled. The safety requirements for hydrogen motor-fuel dispensing has matured over the years and as a result there are over 30 public hydrogen motor-fuel stations installed in California alone with public and private hydrogen motor-fuel stations located in other states, and the numbers will increase. Some stations are self service and others are not. The requirements in 2309.4 should be for all hydrogen stations whether they are self-service or filling is done by an attendant.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

Both self service and full service hydrogen stations adopt the requirements in 2309, so there should not be an impact to cost.

Internal ID: 1337

F219-18

IFC: 202 (New), 2309.4, 2311.8.11, 2311.8

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com)

2018 International Fire Code

Add new definition as follows:

APPROVED

TANK, MOTOR VEHICLE FUEL A tank permanently mounted on a motor vehicle to store a gas or liquid fuel which is used for propulsion.

Revise as follows:

2309.4 Dispensing into motor vehicles at self-service hydrogen motor fuel-dispensing facilities. Self-service hydrogen motor fuel-dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted motor vehicle fuel containers ~~tanks~~ on hydrogen-powered vehicles.

In addition to the requirements in Section 2311, the *owner* of a self-service hydrogen motor fuel-dispensing facility shall provide for the safe operation of the system through the institution of a fire safety plan submitted in accordance with Section 404, the training of employees and operators who use and maintain the system in accordance with Section 406, and provisions for hazard communication in accordance with Section 407.

2311.8 Repair garages for vehicles fueled by lighter-than-air fuels. The room, motor vehicle repair booth or motor vehicle repair space containing repair garage activities for the conversion or repair of vehicles that use CNG, LNG, hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.8 through 2311.8.11 in addition to the other requirements of Section 2311. Repair garages for the repair of vehicles that use hydrogen fuel shall be in accordance with this code and NFPA 2.

Exceptions:

1. Repair garages where work is conducted only on vehicles that have been defueled and their systems purged with nitrogen gas, and where standard operating procedures to document and maintain the fueling status throughout repair operations are approved.
2. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle.
3. Repair garages for hydrogen-fueled vehicles where work is not performed on the ~~hydrogen storage tank~~ motor vehicle fuel tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain less than 200 cubic feet (5.6 m³) of hydrogen.
4. Repair garages for natural-gas-fueled vehicles where work is not being performed on the motor vehicle fuel storage ~~storage~~ tank, and is limited to the exchange of parts and maintenance not requiring open flame or welding on the natural-gas-fueled vehicle. During the work, the natural gas, in the motor vehicle fuel tank shall contain a pressure of not more than 250 psi at 70°F (1724 kPa at 21°C).

2311.8.11 Defueling equipment required at vehicle maintenance and repair facilities. Facilities for repairing or replacing hydrogen fuel tanks on hydrogen-fueled vehicles shall have equipment to defuel vehicle storage tanks. Where work must be performed on a vehicle's motor vehicle fuel storage ~~storage~~ tank for the purpose of maintenance, repair or cylinder certification, defueling and purging shall be conducted in accordance with Section 2309.6 and NFPA 2.

Reason:

The addition of "motor vehicle fuel tank" definition helps clarify the difference between a fuel 'tank' in a car and other containers and tanks which are currently defined in the IFC as having volumes that do not match the volume of motor fuel 'tanks'.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The proposal is a clarifying definition and has no impact on cost

Internal ID: 1639

F220-18

IFC: 2309.4

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com); Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (RJD@davidsoncodeconcepts.com)

2018 International Fire Code

APPROVED

Revise as follows:

2309.4 Dispensing into motor vehicles at self-service hydrogen motor fuel-dispensing facilities. Self-service hydrogen motor fuel-dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted fuel containers on hydrogen-powered vehicles.

In addition to the requirements in Section 2311, the *owner* of a self-service hydrogen motor fuel-dispensing facility shall provide for the safe operation of the system through the institution of a fire safety plan submitted in accordance with Section 404, the training of employees and operators who use and maintain the system in accordance with Section 406, and provisions for hazard communication in accordance with Section 407.

Exception: Filling of non-permanently mounted storage containers or tanks for motor fuel-dispensing system testing purposes is permitted.

Reason:

Hydrogen dispensing facilities require testing which uses tanks which may not be permanently mounted on a hydrogen fueled vehicle. This testing is important to ensure the proper function of the stations. The exception allows testing to occur.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The proposed text allows for testing at the station and does not affect the cost.

Internal ID: 1338

F221-18

IFC: 2309.6

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com); Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (RJD@davidsoncodeconcepts.com)

2018 International Fire Code

APPROVED

Revise as follows:

2309.6 Repairs, purging, defueling and discharge. The repair, purging, defueling or discharge activities associated with hydrogen motor fuel ~~supply systems and dispensing and generation systems, storage tanks~~ and the installation of the systems shall be in accordance with Chapters 53 and 58 and NFPA 2.

Exception: The motor vehicle fuel tank and the fuel supply piping from the motor vehicle fuel storage tank to the engine compartment on a motor vehicle or forklift unless the fuel tank is required to be defueled in accordance with Section 2311.8.11.

Reason:

The proposed text clarifies that this section is primarily intended to apply to the fixed facility equipment and only applies to a motor vehicle fuel tank when required to be defueled by Section 2311.8.1

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The proposed text only clarifies the use of the defueling equipment

Internal ID: 1340

F223-18

IFC: 2311.8

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (rjd@davidsoncodeconcepts.com); Spencer Quong, representing Toyota Motor North America (squong@yahoo.com)

2018 International Fire Code

APPROVED

Revise as follows:

2311.8 Repair garages for vehicles fueled by lighter-than-air fuels. The room, motor vehicle repair booth or motor vehicle repair space containing repair garage activities for the conversion or repair of vehicles that use CNG, LNG, hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.8 through 2311.8.11 in addition to the other requirements of Section 2311. Repair garages for the repair of vehicles that use hydrogen fuel shall be in accordance with this code and NFPA 2.

Exceptions:

1. Repair garages where work is conducted only on vehicles that the motor fuel tank and system have been defueled and ~~their systems~~ the motor fuel tank have been purged with nitrogen gas, and where standard operating procedures to document and maintain the fueling status throughout repair operations are approved.
2. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle.
3. Repair garages for hydrogen-fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain less than 200 cubic feet (5.6 m³) of hydrogen.
4. Repair garages for natural-gas-fueled vehicles where work is not being performed on the fuel storage tank, and is limited to the exchange of parts and maintenance not requiring open flame or welding on the natural-gas-fueled vehicle. During the work, the natural gas, in the vehicle fuel tank shall contain a pressure of not more than 250 psi at 70°F (1724 kPa at 21°C).

Reason:

The purpose of this proposal is to modify the language to require the motor fuel tank and system to be defueled, but only the fuel tank to be purged with nitrogen rather than the entire "system".

The small diameter fuel line running from the motor fuel tank to the engine compartment contains a de minimus amount of gaseous fuel that does not pose a risk to the repair facility. The majority of this gaseous fuel is during the defueling process making nitrogen purging of this portion of the system unnecessary.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This language does not impact construction and will have no impact on construction costs, however, it can reduce operational expenses by eliminating an unnecessary step.

Internal ID: 1657

F224-18

IFC: 2311.8

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (rjd@davidsoncodeconcepts.com); Spencer Quong, representing Toyota Motor North America (squong@yahoo.com)

2018 International Fire Code

APPROVED

Revise as follows:

2311.8 Repair garages for vehicles fueled by lighter-than-air fuels. The room, motor vehicle repair booth or motor vehicle repair space containing repair garage activities for the conversion or repair of vehicles that use CNG, LNG, hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.8 through 2311.8.11 in addition to the other requirements of Section 2311. Repair garages for the repair of vehicles that use hydrogen fuel shall be in accordance with this code and NFPA 2.

Exceptions:

1. Repair garages where work is conducted only on vehicles that have been defueled and their systems purged with nitrogen gas, and where standard operating procedures to document and maintain the fueling status throughout repair operations are approved.
2. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle. Movement of a subassembly upon which the motor fuel tank remains mounted to allow access to other parts of the vehicle that are not a portion of the fuel system shall be permitted.
3. Repair garages for hydrogen-fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain less than 200 cubic feet (5.6 m³) of hydrogen.
4. Repair garages for natural-gas-fueled vehicles where work is not being performed on the fuel storage tank, and is limited to the exchange of parts and maintenance not requiring open flame or welding on the natural-gas-fueled vehicle. During the work, the natural gas, in the vehicle fuel tank shall contain a pressure of not more than 250 psi at 70°F (1724 kPa at 21°C).

Reason:

With motor vehicles today it is common to be required to move a subassembly to access the part needing repair or replacement. At times this includes the subassembly the motor fuel tank is mounted to.

There are varying opinions on the part on fire code officials on whether or not this can be done without defueling and nitrogen purging the fuel tank. Some consider that repair work "on the motor fuel tank and system" other do not.

The added language is intended to firmly state that movement of the subassembly the motor fuel tank is permitted under this exception which is limited to the exchange of parts and no use of open flame or welding. The tank remains firmly mounted to its mounting chassis and is not free to drop, roll or otherwise move during this process and as such does not present any additional safety concerns.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal does not impact the cost of construction. It can reduce the operational costs in those locations where defueling and purging has been required.

Internal ID: 1676

F225-18

IFC: 2311.8

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com)

2018 International Fire Code

APPROVED

Revise as follows:

2311.8 Repair garages for vehicles fueled by lighter-than-air fuels. The room, motor vehicle repair booth or motor vehicle repair space containing repair garage activities for the conversion or repair of vehicles that use CNG, LNG, hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.8 through 2311.8.11 in addition to the other requirements of Section 2311. Repair garages for the repair of vehicles that use hydrogen fuel shall be in accordance with this code and NFPA 2.

Exceptions:

1. Repair garages where work is conducted only on vehicles that have been defueled and their systems purged with nitrogen gas, and where standard operating procedures to document and maintain the fueling status throughout repair operations are approved.
2. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle.
3. Repair garages for hydrogen-fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain less than ~~200~~ 400 cubic feet (~~5.6~~ 11.2 m³) of hydrogen.
4. Repair garages for natural-gas-fueled vehicles where work is not being performed on the fuel storage tank, and is limited to the exchange of parts and maintenance not requiring open flame or welding on the natural-gas-fueled vehicle. During the work, the natural gas, in the vehicle fuel tank shall contain a pressure of not more than 250 psi at 70°F (1724 kPa at 21°C).

Reason:

Exception 3 of Section 2311.7 is intended to allow work on the fuel system, except for the hydrogen storage tank without having to install additional ventilation and gas detection systems in the repair garage. The vehicle's shutoff valve must be securely closed on the fuel storage container so that it is a closed system and no gas can escape during maintenance operations. This proposal is increasing the allowable amount of hydrogen in the sealed fuel tank from 200 to 400 cubic feet (NTP).

Although each hydrogen passenger vehicle is different, typically their storage containers hold between 5000-50000 cubic feet (NTP) of hydrogen at high pressure (5000-10000 psi). However, the hydrogen leaving the storage container is regulated to a lower pressure, typically less than 250 psi and less than 10 cubic feet (NTP) of hydrogen.

Any release of hazardous material can pose a problem. However, this proposal addresses the issues in two ways. First, it requires that the shutoff valve on the fuel storage container to be securely closed. Hydrogen vehicles are required to have a manual valve that can be shut off for maintenance¹. In most vehicles, the shutoff valve fails shut, so the standard operating procedure to ensure that the valve is closed is to disconnect the 12V battery. For manual valves, it can be tagged and locked in the off position. Since almost all of the hydrogen is in the fuel storage container, this requirement will ensure only a minimal amount of hydrogen is left in the remainder of the fuel system.

Second, in the event that the fuel storage container is opened during repairs and all of the hydrogen is allowed to escape, this proposal requires that the entire fuel system be defueled to less than 400 cubic feet (NTP). This is less than 40% of the Maximum Allowable Quantity (MAQ) per control area listed in Table 5003.1.1(1) through 5003.1.1(4).

With more and more hydrogen vehicles on the road, there is a need to be able to work on the low pressure side of the fuel system at any repair garage without adding additional ventilation and gas detection systems. This proposal allows for this work as long as two requirements are met: the fuel storage container is closed and the amount of hydrogen is less than the existing IFC limitations for hazardous materials, and flammable gases. Already, repair garages have industrial cylinders of acetylene and other flammable gases without additional ventilation and detection equipment. Even if the repair garages meet the requirements in this exception, they will still need to be in accordance with Sections 5001 and 5003.

Bibliography:

"Standard for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles." Society of Automotive Engineers. 2013.

http://standards.sae.org/j2579_201303/

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The proposal clarifies the quantity of hydrogen which is allowed in the tank before upgrades are required, but does not impact the type or cost of upgrades.

Internal ID: 1335

F226-18

IFC: 2311.8

Proponent: Spencer Quong, representing Toyota Motor North America (squong@yahoo.com); Robert Davidson, Davidson Code Concepts, LLC, representing Toyota, USA (RJD@davidsoncodeconcepts.com)

2018 International Fire Code

NOT APPROVED

Revise as follows:

2311.8 Repair garages for vehicles fueled by lighter-than-air fuels. The room, motor vehicle repair booth or motor vehicle repair space containing repair garage activities for the conversion or repair of vehicles that use CNG, LNG, hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.8 through 2311.8.11 in addition to the other requirements of Section 2311. Repair garages for the repair of vehicles that use hydrogen fuel shall be in accordance with this code and NFPA 2.

Exceptions:

1. Repair garages where work is conducted only on vehicles that have been defueled and their systems purged with nitrogen gas, and where standard operating procedures to document and maintain the fueling status throughout repair operations are approved.
2. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle.
3. Repair garages for hydrogen-fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain less than 200 cubic feet (5.6 m³) of hydrogen.
4. Repair garages for natural-gas-fueled vehicles where work is not being performed on the fuel storage tank, and is limited to the exchange of parts and maintenance not requiring open flame or welding on the natural-gas-fueled vehicle. During the work, the natural gas, in the vehicle fuel tank shall contain a pressure of not more than 250 psi at 70°F (1724 kPa at 21°C).
5. Where approved by the fire code official, repair garages for hydrogen-fueled vehicles where an analysis has been submitted documenting that a flammable mixture in air will not occur in the room or space if the hydrogen is released from the motor fuel tank..

Reason:

The purpose of this proposal is to eliminate the extra protection features for hydrogen motor vehicle repair garages in those cases where an analysis has been performed and submitted documenting that flammable mixture of the hydrogen and air will not occur if the hydrogen is released from its tank.

The application of this exception would be conditioned upon the approval of the fire code official since the necessary analysis, including computer modeling, would be facility specific including the dimensions of the room or space.

Cost Impact

The code change proposal will decrease the cost of construction .

This change would decrease the cost of construction in those cases where the application of the analysis exception is approved.

Internal ID: 1333

F290-18

IFC: 5003.12, 5004.14 (New), 5005.3.3, 5005.4.3

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing Self (rjd@davidsoncodeconcepts.com)

2018 International Fire Code

Revise as follows:

APPROVED

5003.12 Outdoor control areas. Outdoor control areas for hazardous materials ~~in amounts not exceeding the maximum allowable quantity per outdoor control area~~ shall be in accordance with the following general requirements:

1. Outdoor control areas shall be kept free from weeds, debris and common combustible materials not necessary to the storage. The area surrounding an outdoor control area shall be kept clear of such materials for not less than 15 feet (4572 mm).
2. Outdoor control areas shall be located not closer than 20 feet (6096 mm) from a public street, public alley, public way or *lot line* that can be built on.

Exceptions:

1. For solid and liquid hazardous materials, a 2-hour fire-resistance-rated wall without openings extending not less than 30 inches (762 mm) above and to the sides of the storage area shall be allowed in lieu of such distance.
2. For compressed gas hazardous materials, unless otherwise specified, the minimum required distances shall not apply where *fire barriers* without openings or penetrations having a minimum *fire-resistance rating* of 2 hours interrupt the line of sight between the storage and the exposure. The configuration of the *fire barrier* shall be designed to allow natural ventilation to prevent the accumulation of hazardous gas concentrations.
3. Where a property exceeds 10,000 square feet (929 m²), a group of two outdoor control areas is allowed where *approved* and where each control area is separated by a minimum distance of 50 feet (15 240 mm).
4. Where a property exceeds 35,000 square feet (3252 m²), additional groups of outdoor control areas are allowed where *approved* and where each group is separated by a minimum distance of 300 feet (91 440 mm).

Add new text as follows:

5004.14 Outdoor storage location. Outdoor storage areas for hazardous materials shall be located as required by Section 5003.12 except where material specific requirements, including requirements in referenced standards, are provided in other chapters of this code.

Revise as follows:

5005.3.3 ~~Location.~~ Outdoor location.. Outdoor dispensing and use areas for hazardous materials shall be located as required by Section 5003.12 except where material specific requirements, including requirements in referenced standards, are provided in other chapters of this code. ~~for outdoor storage in accordance with Section 5004.~~

5005.4.3 ~~Location.~~ Outdoor location.. Outdoor-handling areas for hazardous materials shall be located as required by Section 5003.12 except where material specific requirements, including requirements in referenced standards, are provided in other chapters of this code. ~~for outdoor storage in accordance with Section 5004.~~

Reason:

The intent of this proposal is to provide correlation between Sections 5003, 5004 and 5005 as it applies to outdoor storage of hazardous materials.

Upon review of the requirements Section 5003, both quantities not exceeding the MAQs and quantities exceeding the MAQs are required to comply with all of Section 5003 General Requirements. As structured, when applying the IFC any specific requirement would take precedence over a general requirement, but the general requirements are the starting point.

When you review Section 5003.12 for Outdoor control areas you find that it is limited to "...amounts not exceeding the maximum allowable quantity per outdoor control area...". This is in conflict with Section 5003.1.4 which requires amounts

exceeding the MAQs to comply with the entire chapter. This wouldn't be a problem if requirements dealing with the location of outdoor storage of hazardous materials was provided for in Sections 5004 and 5005.

When reviewing Section 5004 Storage which provides for the storage of hazardous materials exceeding the MAQs, though there are some code requirements applicable to outdoor storage, there are no provisions for the location of the outdoor storage.

In reviewing Section 5005 which deals with Use, Dispensing and Handling of hazardous materials in amounts exceeding the MAQs you find Sections 5005.3.3 and 5005.4.3, both of which point you back to Section 5004 for requirements on the location requirements. As identified above, there are no requirements in Section 5004 dealing with the location of the materials.

This proposal addresses this by modifying Section 5003.12 to delete the language referring to amounts not exceeding the MAQ and adding language identifying the provisions as "general requirements".

Then a new section is added to Section 5004 pointing back to Section 5003.12 when there are no location requirements provided for in the chapters that provide requirements specific to a material or an activity using a hazardous material. This recognizes that there can be requirements within those specific chapters for locations of storage or use such as dispensing in Chapter 23, liquid storage of flammable or combustible liquids in Chapter 57 and in the case of flammable gases previous distance tables were removed and replaced with references to standards such as NFPA 2 and NFPA 55 that contain updated location requirements.

Finally Sections 5005.3.3 and 5005.4.3 have been modified to be similar in language to the new Section 5004.14 and to point back to Section 5003.12.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

As written, there is no intent to impact the cost of construction, however, by adding clarification on this issue cost can be reduced.

Internal ID: 1606
