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PUBLIC PROPOSAL FORM

FOR PUBLIC PROPOSALS ON THE INTERNATIONAL CODES
2004/2005 CODE DEVELOPMENT CYCLE

PLEASE SEE REVERSE FOR INSTRUCTIONS ON SUBMITTING PUBLIC PROPOSALS. PROPOSALS MUST COMPLY WITH THESE INSTRUCTIONS.

CLOSING DATE: All Proposals Must Be Received by August 20, 2004.

The 2004/2005 Code Development Hearings are tentatively scheduled for February 21 – March 2, 2005 in Cincinnati, OH.

- 1) Indicate the format in which you would like to receive your Public Proposals Monograph (PPM), Report of the Hearing (ROH) and Final Action Agenda (FAA):

Paper * CD *Download from ICC Website

(*Note: A paper copy will not be sent to you if you have chosen the CD or Download format.)

- 2) PLEASE TYPE OR PRINT CLEARLY: FORMS WILL BE RETURNED if they contain unreadable information.

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- 3) *Signature: _____ Signature on File (see over)

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- 4) Cost Impact: Indicate if this Proposal: will will not increase the cost of construction.

- 5) Indicate appropriate International Code(s) associated with this Public Proposal – Please use Acronym:

If you have also submitted a separate coordination change to another I-Code, please indicate the code:
(See back of this form for list of names and acronyms for the International Codes).

- 6) Revision to: Section IFC Table 2209.3.1 Table _____ Figure _____

- 7) PROPOSAL Please check appropriate box:

Revise as follows: Add new text as follows Delete and substitute as follows: Delete without Substitution(s):

Show the proposed NEW, REVISED or DELETED TEXT in legislative format: ~~Line through text to be deleted.~~ Underline text to be added.

PROPOSAL *Continued* (Attach additional sheets as necessary)

- 8) SUPPORTING INFORMATION (State purpose and reason, and provide substantiation to support proposed change):

SUPPORTING INFORMATION *Continued* (Attach additional sheets as necessary)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL
SUBMITTAL AS A DOCUMENT ATTACHED TO AN E-MAIL IS PREFERRED

7) PROPOSAL TO THE INTERNATIONAL FIRE CODE

1. Revise Table 2209.3.1 as follows:

**TABLE 2209.3.1
MINIMUM SEPARATION FOR GASEOUS HYDROGEN DISPENSERS, COMPRESSORS,
GENERATORS AND STORAGE VESSELS**

OUTDOOR EQUIPMENT OR FEATURE	DISTANCE ^a (feet)
Building—Noncombustible walls, sprinklered or nonsprinklered	10 ^{b,c}
Building—Combustible walls, sprinklered or nonsprinklered	25 ^{b,c,e}
Building—Noncombustible walls, 2-hour fire barrier interrupts line of sight	5
Off-site Public sidewalks and on-site/off-site parked vehicles	15 ^{a,b,c}
Lot line	10 ^{a,b}
Air intake openings	25 ^{e,d}
Wall openings located less than 25 feet vertically above grade	20 ^{e,d}
Wall openings located greater than 25 feet or more vertically above grade	25 ^d
Outdoor public assembly	25 ^{a,b}
Ignition source ^{e,e}	10
Above ground flammable or combustible liquid storage— Above ground , diked in accordance with Section 3404.2.9.6, distance to dike wall	20
Above ground flammable or combustible liquid storage— Above ground , not diked in accordance with Section 3404.2.9.6, distance to tank	50
Underground flammable or combustible liquid storage— Below ground , distance to vent or fill opening	20
Above ground flammable gas storage (non-other than hydrogen)— Above ground , with common emergency shutoff interconnected with the hydrogen system	25
Above ground flammable gas storage (non-other than hydrogen)— Above ground , no common without emergency shutoff interconnected with the hydrogen system	50
Combustible waste material (see Section 304.1.1)	50 ^b
Liquefied hydrogen storage—Distance to buildings, openings, lot lines, public ways and on-site/off-site parked vehicles	25 ^a
Vertical plane of the nearest overhead electric wire of an electric trolley, train or bus line	50
Vertical plane of the nearest wire of overhead electrical power distribution lines	5

For SI: 1 foot = 304.8 mm. 1 cubic foot = 0.02832 m³.

- a. ~~Reduction to 5 feet shall be permitted where a 2-hour fire barrier interrupts the line of sight between the equipment and the exposure. The height of the barrier for vertical tanks shall be no less than one-third of the height of the tank measured vertically, and the length of the wall shall be 1.5 times the maximum diameter of the tank. The height of the barrier for vertical tanks shall be no less than one-third of the height of the tank measured vertically, and the length of the wall shall be 1.5 times the maximum~~

~~diameter of the tank. The applicability of tabular distance is in terms of a radius which defines a hemisphere from the source when not interrupted by an intervening fire barrier without through penetrations.~~

~~b. See Section 2209.3.1.1~~

~~b.c. A reduction to 0 feet shall be permitted for dispensing equipment and vehicles being refueled. The dispenser and point of transfer for dispensing need not be separated from canopies constructed in accordance with Section 406.5 of the International Building Code and constructed in a manner that prevents the accumulation of hydrogen gas.~~

~~c.d. Measured along the natural and unobstructed line of travel (e.g., around protective walls, around corners of buildings).~~

~~d.e. Ignition source. A flame, spark or hot surface capable of igniting flammable vapors or fumes. Such sources include appliance burner igniters, and hot work and hot surfaces capable of igniting flammable vapors.~~

~~e. For storage volume greater than or equal to 15,000 cubic feet at NTP.~~

2. Delete Section 2209.3.4 without replacement:

~~2209.3.4 Overhead lines. Generation, compression, storage and dispensing equipment shall be separated from overhead electrical lines as follows:~~

- ~~1. Not less than 50 feet (15 240 mm) from the vertical plane below the nearest overhead wire of an electric trolley, train or buss line; and~~
- ~~2. Not less than 5 feet (1524 mm) from the vertical plane below the nearest overhead electrical wire.~~

3. Add new text as follows:

2209.3.1.1 Barrier wall construction – gaseous hydrogen. The outdoor separation shall be permitted to be reduced to 5 feet where a 2-hour fire barrier interrupts the line of sight between equipment, other than dispensers, and the exposure within the radial distance as indicated by the tabular value. The height of the barrier shall be a minimum of 6 feet high, but no less than 1.5 times the height of the equipment measured vertically. The length of the wall shall be no less than 1.5 times the maximum diameter or length of the tank.

2209.3.1.2 Location of equipment. Equipment shall be located from the enclosing walls at a distance not less than one tank diameter. When horizontal tanks are used the distance from any one enclosing wall shall be not less than ½ the length of the tank or a minimum of 5 ft.

2209.3.2.5.1 Location on property. In addition to the requirements of Section 2203.1, above ground liquefied hydrogen storage containers, compression and vaporization equipment serving motor fuel-dispensing operations shall be located 25 feet (7620 mm) from buildings having combustibile exterior wall surfaces, buildings having noncombustibile exterior wall surfaces that are not part of a 1-hour fire-resistance-rated assembly, wall openings, lot lines of property which could be built on, public streets and parked vehicles.

2209.3.2.5.1.1 Barrier wall construction – liquefied hydrogen. The outdoor separation distance shall be permitted to be reduced to 5 feet where a 2-hour fire barrier interrupts the line of sight between equipment, other than dispensers, and the exposure within the radial distance as indicated by the tabular value. The height of the barrier shall be a minimum of 6 feet high, but no less than 1.5 times the height of equipment, other than the cryogenic storage vessel, measured vertically. The length of the wall shall be no less than 1.5 times the maximum diameter or length of the tank. The 2-hour fire barrier shall not have more than two sides at approximately 90-degree (1.57 rad) directions, or three sides with connecting angles of approximately 135 degrees (2.36 rad). When fire barrier walls on three sides are used, piping and control systems serving stationary tanks shall be located at the open side of the enclosure created by the barrier walls.

2209.3.2.5.1.2 Location of equipment. Equipment shall be located from the enclosing walls at a distance not less than one tank diameter. When horizontal tanks are used the distance from any one enclosing wall shall be not less than ½ the length of the tank or a minimum of 5 ft.

8) SUPPORTING INFORMATION:

This proposal offers organizational and technical improvements to Table 2209.3.1 to reduce the potential for non-uniform interpretation in enforcement. Revisions to the table incorporate terminology recognized by the IFC and IBC in addition to making Table 2209.3.1 specific to the storage of hydrogen for motor fuel-dispensing operations.

There are technical changes as follows:

1. For sites constrained by property limits, the barrier wall requirements will remain, but exist as separate sections referred to by NEW tabular Footnote 'b' and the new sub-section 2209.3.2.5.1. In creating Section 2209.3.2.5.1 the lone cryogenic hydrogen line item in Table 2209.3.1 is removed, thereby avoiding interpretive uncertainty for the gaseous hydrogen applications in the Table. The more detailed barrier wall construction criteria in Sections 2209.3.1.1 and 2209.3.2.5.1 have been developed primarily to prevent direct jet flame impingement and exposure to radiant heat flux

levels harmful to personnel. In addition to preventing confinement and pocketing of unignited flammable gases, the improvements allow for ventilation, service, maintenance and inspection of utilization equipment. The length of a barrier for radiant protection is different based on the storage phase of hydrogen (i.e., liquid vs. gas) and the type of tank installed.

2. Footnote 'b' is just as appropriate for noncombustible building walls as it is for combustible building walls.
3. Improvements to the dispenser separation Footnote 'c' establish the connection to the construction requirements for canopies providing weather protection for the dispensing equipment.
4. Footnote 'e' implies there are no separation requirements for systems storing less than 15,000 cubic feet of inventory. By deleting Footnote 'e' all system sizes will be covered.
5. The provisions of Section 2209.3.4 are deleted and recast in Table 2209.3.1.
6. In lines 1 and 2 of the table, the phraseology "sprinklered or nonsprinklered" is deleted, as this phrase does not discriminate between the presence or absence of this fire protection feature.
7. Line 3 is deleted in its entirety, as the provision is covered by revised Footnote 'b' and new sub-section 2209.3.2.5.1.
8. Line 4 deletes the phraseology "on-site/off-site" because there is no other option to parking.
9. Editorial changes to Line 5 delete the term "vertical" since a horizontal distance above grade will not be possible.
10. Revisions to Lines 11 and 12 clarify that the separation distance is measured to the dike wall or tank, respectively.
11. Footnote 'a' is revised to clarify that the measurement of distance is not limited to the horizontal plane.
12. Revisions to new Footnote 'e' simplify the sentence. In addition, "hotwork" is already defined by the IFC.