MEMORANDUM

DATE: July 20, 2015

TO: Principal and Alternate Members of the Technical Committee on Medical Equipment (HEA-MED)

FROM: Jon Hart, Staff Liaison

SUBJECT: AGENDA PACKAGE—NFPA 99 First Draft Meeting (A2017)

Enclosed is the agenda for the NFPA 99 First Draft meeting of the Technical Committee on Emergency and Security Management, which will be held on Tuesday, August 11, 2015 at the Sheraton Inner Harbor Hotel, in Baltimore, MD. Please review the attached Public Inputs in advance, and if you have alternate suggestions, please come prepared with proposed language and respective substantiation.

If you have any questions prior to the meeting, please do not hesitate to contact me at:
Office: (617) 984-7470
Email: jhart@nfpa.org

For administrative questions, please contact Elena Carroll at (617) 984-7952.

I look forward to working with everyone.
Table of Contents

Part 1 – Meeting Agenda
Part 2 – Committee Roster
Part 3 – Committee Distribution
Part 4 – Previous Meeting Minutes
Part 5 – Sample Meeting Motions
Part 6 – Public Inputs
AGENDA

1. Call to Order – 8:00 am

2. Introductions and Attendance

3. Chairman Comments

4. Approval of Previous Meeting Minutes

5. Staff Liaison Presentation on NFPA Revision Process and A2017 Cycle

6. Preparation of the First Draft
   - Review Public Inputs
   - Create First Revisions

7. New Business

8. Discuss dates for the TC Second Draft Meeting (Between 5/16 and 7/25, 2016)

9. Adjournment – No later than 5:00 pm

Please submit requests for additional agenda items to the chair and staff liaison at least seven days prior to the meeting.

Please notify the chair and staff liaison as soon as possible if you plan to introduce any new material not submitted through Public Input at the meeting.
### Key Dates for the Annual 2017 Revision Cycle

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Public Input Closing Date</td>
<td>July 6, 2015</td>
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<tr>
<td><strong>Final Date for First Draft Meeting</strong></td>
<td>September 14, 2015</td>
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<td>Ballots Mailed to TC before</td>
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<td>Closing Date for Notice of Intent to Make a Motion (NITMAM)</td>
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<td><strong>Issuance of Consent Document (No NITMAMs)</strong></td>
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<td>NFPA Annual Meeting (Boston)</td>
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<td><strong>Issuance of Document with NITMAM</strong></td>
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Technical Committee deadlines are in **bold**.
Technical Committee Roster
<table>
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<th>Name</th>
<th>Position</th>
<th>Company/Section</th>
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<tr>
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<td>HEA-MED</td>
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<tr>
<td>Donald D. King</td>
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<td>1800 Harrison Street, 19th Floor</td>
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Technical Committee Distribution
### Distribution by %

**HEA-MED  Medical Equipment**

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<tr>
<td>John Maurer</td>
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<td>USVA</td>
<td>U</td>
<td>Principal</td>
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</table>

**Total Voting Number** 14
Previous Meeting Minutes
1. **Call to Order.** The meeting was called to order at 9:00 am Eastern on Monday, May 20, 2013, by Committee Chair, Alan Lipschultz.

2. **Attendance and Introductions:** Attendance was taken and those present at the meeting introduced themselves and stated who they represent on the committee. Those who were present at the meeting are listed below:

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Lipschultz, Alan-Chair</td>
<td>Association for the Advancement of Medical Equipment</td>
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<td>Connor, Charles – Principal</td>
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<td>Kostinsky, Harvey – Principal</td>
<td>ECRI Institute</td>
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<td>Reynolds, Ronald – Principal</td>
<td>Virginia State Fire Marshal’s Office</td>
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<td>Safdie, Ed – Principal</td>
<td>US Department of Veterans Affairs</td>
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<td>Sandler, Larry – Principal</td>
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<td>Beebe, Chad-Alternate</td>
<td>American Society of Healthcare Engineers</td>
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<tr>
<td>Hart, Jonathan – Staff Liaison</td>
<td>NFPA</td>
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<tr>
<td>Poacsek, David – Guest</td>
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3. **Chairman Comments:** Alan Lipschultz spoke to the agenda for the meeting and provided opening comments.
4. **Minutes Approval:** The minutes of the HEA-MED August 16, 2012 First Draft Meeting were approved as distributed in the Agenda Package.

5. **Staff Liaison Presentation:** Jon Hart proceeded to give the staff presentation for the meeting which included general meeting procedures and review of the Annual 2014 revision cycle.

6. **Development of Second Draft:** The committee reviewed all public comments (PC) and resolved them by taking a committee action, providing a statement, and/or creating a second revision (SR) based on the PC. Other Second Revisions were also created. See the Second Draft and Second Draft Report for the official committee actions.

7. **New Business:** A discussion on the use of the words ‘appliance’ and ‘equipment’ was had and it was determined that as it currently stands, some confusion could result from how they might possibly be considered interchangeable. It is too late a time in this revision process to evaluate for the 2015 edition, but the issue will be looked at in detail for the subsequent edition.

8. **Meeting Adjourned:** The meeting was adjourned at 12:30 pm on May 20, 2013.
Sample Motions for First Draft Meeting
<table>
<thead>
<tr>
<th>Possible Action #1: Resolve PI (no change to section)</th>
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<td>Make a statement to resolve a PI</td>
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<th>Possible action #2: Create First Revision (make a change to a section)</th>
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<td><strong>Action Required</strong></td>
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<td>Step 2 If the revision is related to multiple PIs, generate a statement to respond to all of them together</td>
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<th>Possible Action #3: Create Committee input</th>
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<td>Step 1 Create proposed revision for solicitation of public comments</td>
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<tr>
<td>Step 2 Generate a statement to explain the intent and why the Committee is seeking public comment</td>
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Public Input
Public Input No. 60-NFPA 99-2015 [ Global Input ]

1. Delete entire subsection 10.2.3.6(5) as follows:

5. Means are employed to ensure that additional devices or nonmedical equipment cannot be connected to the multiple outlet extension cord after leakage currents have been verified as safe.

2. Delete corresponding Annex A material A.10.2.3.6(5) as follows:

A.10.2.3.6 (5) Power taps used in conjunction with an isolated power system are not subject to this requirement.

Additional Proposed Changes

<table>
<thead>
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<th>File Name</th>
<th>Description</th>
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Statement of Problem and Substantiation for Public Input

NOTE: This public input originates from Tentative Interim Amendment No. 15-1 (Log 1104) issued by the Standards Council on August 14, 2014 and per the NFPA Regs., needs to be reconsidered by the Technical Committee for the next edition of the Document.

Submitter’s Substantiation: The Technical Committee accepted a public comment (NFPA 99 HEA-MED A11 ROC; 99-307 Log #272 HEA-MED) which would have deleted 10.2.3.6 (5), but another public comment 99-308 Log #64 HEA-MED on that section was Accepted in Principal and resulted in adding annex material A.10.2.3.6 (5) to that section. (Both items reported in the NFPA 99 Report on Comments A2011.) NFPA, when compiling the revised version of the document, did not incorporate the first committee action and implemented the second action, without determining the position of the committee on this issue. Technical background: Both of the ROC proposals were based on the recognition that it is impractical to completely eliminate the use in hospitals of multiple outlet extension cords that allow clinicians and staff to plug and unplug devices as needed. The situation in the OR was adeptly explained in ROC 99-308 Log #64, “It is near impossible to plug all electrical devices used in an operating room to a wall receptacle. The cord length on equipment are not long enough to reach the wall and even if it did it would restrict safe movement around the OR table.” The problem, however, exists not just in the OR. For example, it is often necessary to use three or more infusion pumps, in addition to other devices, on one patient in a patient room. There may not be an adequate number of outlets nearby and running multiple cords, perhaps with extension cords, can hamper access to the patient and present a trip hazard. Instead, having an appropriate quality and properly maintained multiple outlet extension cord mounted on an IV pole, allows a safe method of powering whatever number of IV pumps is needed for a patient. The Committee action to accept proposal 99-307 Log #272 would have allowed this type of use of multiple outlet extension cords and eliminated any need for further exceptions or annex material. Furthermore, the use of isolated power, currently mentioned in the annex material, does not address concerns related to touch (leakage) current values that are addressed in the main text to which the annex comment is attached. Isolated power does not limit equipment touch currents to values required within the main document. Emergency Nature: Uncorrected, the present requirements pose an unreasonable burden on hospitals and clinicians and restricts safe access to patients not only in the operating room, but also in other patient care areas. Furthermore, as accrediting bodies, such as The Joint Commission (TJC) and the U.S. Centers for Medicare & Medicaid Services (CMMS) incorporate these requirements into their assessments and survey processes, it becomes increasingly difficult to reverse these decisions and facilities are forced to implement alternative practices that may be either unnecessarily expensive (e.g., renovations to increase outlet numbers and accessibility throughout the hospital) or less safe (e.g., use of more single outlet extension cords running greater distances to access multiple wall outlets). Hospitals have already approached ECRI Institute regarding this problem, and it is therefore not just a theoretical concern, but one which facilities are being forced to address now. This TIA would address at least three of the factors to be considered when assessing the emergency nature of a TIA proposal (REGULATIONS GOVERNING COMMITTEE PROJECTS, http://www.nfpa.org/assets/files/PDF/CodesStandards/Directory /RegsGovCommProjects_2012.pdf) (b) The document contains a conflict within the document or with another NFPA document. This factor applies, because, as discussed in the technical background above, the Annex reference to isolated power is not related to the associated main document text. (d) The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation. Adherence to the requirements may hinder access to the patient and pose a trip hazard. (f) The proposed TIA intends to correct a circumstance in which the revised document has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process, or was without adequate technical (safety) justification for the action. As discussed above, the current situation is the result of NFPA procedures in place at the time (and since corrected) that allowed for decisions to be made based on a procedural mishap without addressing technical considerations.

Submitter Information Verification

Submitter Full Name: TC on HEA-MED
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 10 09:51:24 EDT 2015
Public Input No. 61-NFPA 99-2015 [Global Input]

1. Revise text to read as follows:

11.5.1.1 Elimination of Sources of Ignition.

11.5.1.1.1 Smoking materials (e.g., matches, cigarettes, lighters, lighter fluid, tobacco in any form) shall be removed from patients receiving respiratory therapy.

11.5.1.1.2 When a nasal cannula and its associated supply tubing are delivering oxygen outside of a patient care room, no sources of open flame shall be permitted in the site of intentional expulsion

11.5.1.1.3 When any other oxygen delivery equipment not specified in 11.5.1.1.2 is in use, no sources of open flame, including candles, shall be permitted in the area of administration.

11.5.1.1.4 Solid fuel-burning appliances shall not be permitted in the area of administration.

11.5.1.1.5 Sparking toys shall not be permitted in any patient care room.

11.5.1.1.6 Nonmedical appliances that have hot surfaces or sparking mechanisms shall not be permitted within oxygen-delivery equipment or within the site of intentional expulsion.

A.11.5.1.1.2 Outside a patient care room, 11.5.1.1.2 prohibits sources of open flame within the site of intentional expulsion (1 ft (0.3 m)) of a nasal cannula. No sources of open flame are permitted within the area of administration (15 ft (4.3 m)) for other types of oxygen delivery equipment or in patient care rooms (see 11.5.1.1.3).

The amount of oxygen delivered by a nasal cannula is limited. One (1) ft (0.3 m) is sufficient separation from an oxygen-enriched atmosphere produced by a nasal cannula which is an oxygen delivery equipment used outside of patient care areas. In the open air, dilution goes to ambient levels (not oxygen-enriched atmosphere) within a few inches of the cannula openings, but 12 in. (300 mm) provides an adequate safety factor. Other oxygen delivery equipment such as masks, are not included since masks would not typically be associated with mobile patients in health care facilities and may deliver greater quantities of oxygen than nasal cannula.

The household-style nursing homes that include kitchens intended for residents’ use and enclosed gas fireplaces present a source of flame ignition to which residents will be exposed. Residents utilizing a nasal cannula would potentially not be allowed to participate in the cooking because it would place the cooking flame within the site of intentional expulsion. However, they would be allowed in the kitchen area to assist in preparing the food and to socialize with other residents and staff in the kitchen similar to what happens in the kitchens of residential environments.

The primary concern is that flame-producing equipment exists in many places in a nursing home and that it would be impractical to maintain a resident with a nasal cannula a minimum of 15 ft (4.3 m) (Area of Administration) away from the flame-producing equipment. Typical flame-producing equipment found in a nursing home includes the following:

1. Candles in chapels
2. Open kitchens using gas cooking equipment
3. Fireplaces
4. Fuel-fired heating equipment
5. Private family dining rooms using fuel-fired equipment
6. Canned cooking fuel (e.g., used under chafing dishes)

A.11.5.1.1.2 Patients and hospital personnel in the area of administration should be advised of respiratory therapy hazards and regulations. Visitors should be cautioned of these hazards through the prominent posting of signs. (See 11.3.4.)

A.11.5.1.1.4 Solid fuel-burning appliances include wood-burning fireplaces, wood stoves, and similar appliances. These pose a greater risk in locations where oxygen is being provided than gas-fueled appliances, in part due to their ability to emit embers into the environment.

A.11.5.1.1.3 Such toys have been associated with fire incidents in health care facilities.

A suggested text for precautionary signs for oxygen tent canopies and oxygen hoods used in pediatric nursing units is the following:

CAUTION: OXYGEN IN USE ONLY TOYS APPROVED BY NURSES MAY BE GIVEN TO CHILD

Additional Proposed Changes

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Statement of Problem and Substantiation for Public Input

A Public Input has been created for the Issued TIA No. 15-2. This TIA was issued on AUGUST 14, 2014. Per the NFPA Regs., all issued TIAs must be reconsidered by the Technical Committee for the Next Edition of the Document.

Submitters' Substantiation: The proposed TIA will address potentially restrictive interpretations for the presence of open flames in the vicinity of nasal cannula oxygen delivery equipment. The area of administration is defined as any point within a room within 15 ft of oxygen equipment or an enclosure containing or intended to contain an oxygen-enriched atmosphere. Section 11.5.1.1.2 prohibits sources of open flame, including candles, in the area of administration. A nasal cannula is considered as oxygen delivery equipment (ODE). Thus, with the current code, a resident with a nasal cannula could be prohibited from being within 15 ft of an open flame.

A site of intentional expulsion is defined as all points within 1 ft of a point at which an oxygen-enriched atmosphere is intentionally vented to the atmosphere. For example, for a patient receiving oxygen via a nasal cannula, the site of intentional expulsion normally surrounds the cannula.

This TIA proposes to revise Section 11.5.1.1.2 to prohibit sources of open flames within the site of intentional expulsion of a nasal cannula. One (1) ft is...
sufficient separation from an oxygen-enriched atmosphere produced by a nasal cannula, which is an oxygen delivery equipment used outside of patient care rooms. Current text in NFPA 99-2012 Edition (i.e., the fifth paragraph in Section A.10.5.4.5) states that in the open air, dilution goes to ambient levels (not oxygen enriched atmosphere) within a few inches of the venting port, but 12 inches provides an adequate safety factor. The proposed revision is consistent with the boundary limit for other sources of ignition, such as electrical equipment, which are prohibited to be used within the site of intentional expulsion (10.5.4.1). Other oxygen delivery equipment such as masks are not included knowing that masks would not typically be associated with mobile patients in health care facilities and may deliver greater quantities of oxygen.

It is estimated that at least 25% of residents in nursing homes need portable oxygen. The main focus of this proposed TIA is the site of intentional expulsion around the cannula. The traditional institutional design for nursing homes has the traditional sources of electrical, hot surfaces and flame sources of ignitions. The new “cultural change facilities” (household units) are allowed in the Life Safety Code-2012 Edition and are being actively promoted by the Centers for Medicare & Medicaid Services (CMS) and providers. CMS has allowed the permissive requirements for open kitchens and enclosed gas fireplaces in the Life Safety Code-2012 Edition until CMS adopts the Life Safety Code-2012 Edition. These are small units of 10-30 beds, with most being 10-16 beds and built with a residential open interior to include kitchens or fireplaces similar to private residences.

The household style nursing homes that include kitchens intended for residents’ use and enclosed gas fireplaces present a source of flame ignition to which residents will be exposed. Residents on oxygen would potentially not be allowed to participate in the cooking because it would place the cooking flame within the site of intentional expulsion. However; they would be allowed in the kitchen area to assist in preparing the food and to socialize with other residents and staff in the kitchen just like what happens in the kitchens of residential environments.

The primary concern is that flame producing equipment exists in many places in a nursing home and that it would be impractical to maintain a resident with a nasal cannula a minimum of 15 ft (Area of Administration) away from the flame producing equipment. Typical flame producing equipment found in nursing homes includes the following:

1. Open kitchens using gas cooking equipment
2. Fireplaces
3. Candles in chapels
4. Private family dining rooms using fuel fired equipment
5. Canned cooking fuel (e.g., used under chafing dishes)

Emergency Nature: The proposed TIA intends to correct a circumstance in which the revised document has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process, or was without adequate technical (safety) justification for the action.

The household unit concept has been actively promoted and this concept has been incorporated into the Life Safety Code-2012 Edition to allow features such as kitchens and fireplaces with safeguards. In addition, the International Code Council (ICC) has approved similar changes for the 2015 editions of the ICC Codes. The 15-ft prohibition of open flames has not been widely enforced by code officials nationwide as applying to areas of administration such as the area around a nasal cannula. Enforcement of the 15-ft limit could lead to a CMS “immediate jeopardy” deficiency which includes an automatic fine and other penalties such as a restriction on the admission of new residents, and could have the effect of adversely affecting the benefits of socialization by residents who utilize portable oxygen.

CMS has announced that they plan to adopt the Life Safety Code-2012 Edition in the near future, which includes the NFPA 99-2012 Edition. CMS regulates all health care facilities in the United States and has stated that TIA’s issued by NFPA prior to CMS final adoption of the Life Safety Code-2012 Edition will be considered part of the Code. Therefore, adoption of the TIA prior to CMS adoption of the Life Safety Code-2012 Edition is critical for the application of the criteria to facilities regulated by CMS.

Submitter Information Verification

Submitter Full Name: TC on HEA-MED
Organization: NFPA
Street Address:
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Submittal Date: Fri Apr 10 10:24:05 EDT 2015
10.2.3.6 Multiple Outlet Connection.

Two or more power receptacles supplied by a flexible cord shall be permitted to be used to supply power to plug-connected components of a movable equipment assembly that is rack-, table-, pedestal-, or cart-mounted, provided that all of the following conditions are met:

1. The receptacles are permanently attached to the equipment assembly.
2. The sum of the ampacity of all appliances connected to the outlets does not exceed 75 percent of the ampacity of the flexible cord supplying the outlets.
3. The ampacity of the flexible cord is in accordance with NFPA 70, National Electrical Code.
4. The electrical and mechanical integrity of the assembly is regularly verified and documented.
5. Means are employed to ensure that additional devices or nonmedical equipment cannot be connected to the multiple outlet extension cord after leakage currents have been verified as safe.

Additional Proposed Changes

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Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as "Reject but Hold" in Public Comment No. 50 of the A2017 Second Draft Report for NFPA 99 and per the Regs. at 4.4.8.3.1.

Statement of Problem and Substantiation for Public Comment

Delete 10.2.3.6 (5). It is impractical to completely eliminate the use in hospitals of multiple outlet extension cords that allow clinicians and staff to plug and unplug devices as needed. This need exists not just in the OR. For example, it is often necessary to use three or more infusion pumps, in addition to other devices, on one patient in a patient room. There may not be an adequate number of outlets nearby and running multiple cords, perhaps with extension cords, can hamper access to the patient and present a trip hazard. Instead, having an appropriate quality and properly maintained multiple outlet extension cord mounted on an IV pole, allows a safe method of powering whatever number of IV pumps is needed for a patient. The committee had agreed to delete Paragraph 10.2.3.6 (5) during the 2012 version revision process, but is was left in as a result of a procedural issue. Additional background has been submitted in a proposed TIA.

Submitter Information Verification

Submitter Full Name: TC ON HEA-PIP
Organization: NFPA 99 TC ON HEALTH CARE FACILITIES MEDICAL EQUIPMENT
Street Address: 
City: 
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Submittal Date: Wed Jul 01 15:09:53 EDT 2015
Multiple Outlet Connection Relocatable Power Taps

Two or more power receptacles supplied by a flexible cord shall be permitted to be used to supply power to plug-connected components of a movable equipment assembly that is pole-, rack-, table-, pedestal-, or cart-mounted, provided that all of the following conditions are met:

1. The receptacles are permanently attached to the equipment assembly.
2. 
3. The ampacity of the flexible cord is in accordance with NFPA 70, National Electrical Code.
4. The sum of the ampacity of all appliances connected to the outlets does not exceed 75 percent of the ampacity of the flexible cord supplying the outlets.

Statement of Problem and Substantiation for Public Input

Change "Multiple Outlet Connections" to "Relocatable Power Taps" for consistency with other ANSI documents (UL 1363 Relocatable Power Taps http://ulstandards.ul.com/standard/?id=1363)

The word "pole-" has been added because the most common relocatable power tap configuration is permanently attached to an IV pole that in turn supplies power to several devices in proximity to the IV pole. This combination is frequently used in Operating Rooms and Catheterization Labs where wall mounted power outlets are mounted far away from the patient. Utilization of these pole-mounted Relocatable Power Taps avoids multiple long power cords from snaking across the floor to the wall periphery outlets, thereby minimizing trip hazards.

Submitter Information Verification

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Submittal Date: Wed May 06 10:42:48 EDT 2015
10.2.5 Leakage Current — Fixed Equipment.
The leakage current flowing through the ground conductor of the power supply connection to ground of permanently wired appliances installed in
general or critical care areas, Category 1 space, shall not exceed 10.0 mA (ac or dc) with all grounds lifted.

Statement of Problem and Substantiation for Public Input

Definition for Critical Care Area is covered in NFPA 99: 3.3.137 Patient Care Space and is designated as Category 1 Space. Any references in NFPA 99
to “Critical Care Area” should be changed to “Category 1 Space”.

Related Public Inputs for This Document

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Submitter Information Verification

Submitter Full Name: GARY BECKSTRAND
Organization: UTAH ELECTRICAL JATC
Street Address: 
City: 
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Submittal Date: Sun Jul 05 12:38:59 EDT 2015
10.3 Testing Requirements — Fixed and Portable Patient Care-Related Electrical Appliances and Equipment.

10.3.1* Physical Integrity.
The physical integrity of the power cord assembly composed of the power cord, attachment plug, and cord-strain relief shall be confirmed by visual inspection.

10.3.2* Resistance.

10.3.2.1 For appliances that are used in the patient care vicinity, the resistance between the appliance chassis, or any exposed conductive surface of the appliance, and the ground pin of the attachment plug shall be less than 0.50 ohm under the following conditions:

1. The cord shall be flexed at its connection to the attachment plug or connector.
2. The cord shall be flexed at its connection to the strain relief on the chassis.

10.3.2.2 The requirement of 10.3.2.1 shall not apply to accessible metal parts that achieve separation from main parts by double insulation or metallic screening or that are unlikely to become energized (e.g., escutcheons or nameplates, small screws).

10.3.3* Leakage Current Tests.

10.3.3.1 General.

10.3.3.1.1 The requirements in 10.3.3.2 through 10.3.3.4 shall apply to all tests.

10.3.3.1.2 Tests shall be performed with the power switch ON and OFF.

10.3.3.2 Resistance Test.
The resistance tests of 10.3.2 shall be conducted before undertaking any leakage current measurements.

10.3.3.3* Techniques of Measurement.
The test shall not be made on the load side of an isolated power system or separable isolation transformer.

10.3.3.4 Leakage and Touch Current Limits.
The leakage and touch current limits in 10.2.5 and 10.2.6 shall be followed.

10.3.4 Leakage Current — Fixed Equipment.

10.3.4.1 Permanently wired appliances in the patient care vicinity shall be tested prior to installation while the equipment is temporarily insulated from ground.

10.3.5 Touch Current — Portable Equipment.

10.3.5.1 If multiple devices are connected together and one power cord supplies power, the touch current shall be measured as an assembly.

10.3.5.2 When multiple devices are connected together and more than one power cord supplies power, the devices shall be separated into groups according to their power supply cord, and the touch current shall be measured independently for each group as an assembly.

10.3.6* Lead Leakage Current Tests and Limits — Portable Equipment.

10.3.6.1 The leakage current between all patient leads connected together and ground shall be measured with the power plug connected normally and the device on.
10.3.6.2
An acceptable test configuration shall be as illustrated in Figure 10.3.6.2.

Figure 10.3.6.2 Test Circuit for Measuring Leakage Current Between Patient Leads and Ground — Nonisolated.

10.3.6.3
The leakage current shall not exceed 100 µA for ground wire closed and 500 µA ac for ground wire open.

Statement of Problem and Substantiation for Public Input

Change title of 10.3 to follow pattern set by title of 10.2 to better identify which equipment we are talking about. Existing wording of 10.3 is confusing.

Submitter Information Verification

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Submittal Date: Thu Jul 02 21:00:22 EDT 2015
10.3.2.2
The requirement of 10.3.2.1 shall not apply to accessible metal parts that achieve separation from main parts by double insulation or metallic screening or that are unlikely to become energized (e.g., escutcheons or nameplates, small screws).

Statement of Problem and Substantiation for Public Input

I would propose to strike the word "double" as being confusing (with Double-Insulated Appliance) and vague (how does user tell if there is double insulation and if it is adequate. The point of the section is that it is pointless for the user to try and take chassis ground measurements on small objects that the manufacturer has insulated from the main chassis.

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Submittal Date: Sun Jul 05 19:37:00 EDT 2015
10.3.6.2
An acceptable test configuration shall be as illustrated in Figure 10.3.6.2.

Figure 10.3.6.2 Test Circuit for Measuring Leakage Current Between Patient Leads and Ground — Nonisolated.

Statement of Problem and Substantiation for Public Input

In figure 10.3.6.2, delete the switch in series with the grounding conductor and the label that reads "Grounding contact switch (use in both "open" and "closed" positions)"

Rationale: The presence of this switch (and label) is in conflict with section 10.3.6.2 which does not mention testing lead leakage with the ground "open" and "closed." A requirement should not be stated as part of a figure.

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Submittal Date: Sun Jul 05 21:22:20 EDT 2015
**Public Input No. 407-NFPA 99-2015 [ Section No. 10.5.2.4 ]**

**10.5.2.4 Devices Likely to Be Used During Defibrillation.**

Devices that are critical to patient safety and that are likely to be attached to the patient when a defibrillator is used (such as ECG monitors) shall be rated as "defibrillator proof."  

**Statement of Problem and Substantiation for Public Input**

The problem is that the correct international term is "Defibrillation Proof" as per ANSI/AAMI ES60601-01, section 8.55 and as defined in section 3.20 which reads "3.20 * DEFIBRILLATION-PROOF APPLIED PART: APPLIED PART that is protected against the effects of a discharge of a cardiac defibrillator to the PATIENT."

This section should comply with ES60601-01 and not try and introduce a new term that means the same thing as an internationally defined term.

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Submittal Date: Sun Jul 05 21:29:35 EDT 2015
10.5.2.6. Electrical Equipment Systems.

Purchase contracts for electrical equipment systems, such as nurse call and signaling that consist of interconnected elements, shall require all of the following:

1. The elements are intended to function together.
2. The manufacturers provide documentation for such interconnection.
3. The systems are installed by personnel qualified to do such installations.

Additional Proposed Changes

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Statement of Problem and Substantiation for Public Input

NOTE: The following Public Input appeared as “Reject but Hold” in Public Comment No. 60 of the (A2014) Second Draft Report for NFPA 99 and per the Regs. At 4.4.8.3.1.

Delete 10.5.2.6 and all subsections. This may be interpreted to mean that only components that are sold to be used together can be used together and does not leave the hospital an option for implementing systems that are composed of components not specifically sold for use together, but which are nevertheless compatible. This is a very complex issue and cannot be adequately addressed in a brief statements. Also, it is outside the scope of this document as it is not of primary concern with respect to electrical and fire safety but involves, many other aspects of compatibility (e.g., information systems communication)

Submitter Information Verification

Submitter Full Name: TC ON HEA-MED
Organization: NFPA
Street Address:
City:
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Submital Date: Thu Apr 09 14:07:25 EDT 2015
Chapter 11 Gas Equipment

11.1 Applicability.

11.1.1 This chapter shall apply to the performance, maintenance, and testing of gas equipment in health care facilities, as specified in Section 1.3.

11.1.2 This chapter shall apply to the use, at normal atmospheric pressure, of all of the following:

(1) Nonflammable medical gases

(2) Vapors and aerosols

(3) Equipment required for the administration of 11.1.2(1) and 11.1.2(2)

11.1.3 When used in this chapter, the term oxygen shall be intended to mean 100 percent oxygen as well as mixtures of oxygen and air.

11.1.4 This chapter shall not apply to special atmospheres, such as those encountered in hyperbaric chambers.
11.7.3.6.2
Liquid oxygen portable containers shall be permitted to be filled indoors when the liquid oxygen base reservoir container is designed for filling such containers and the written instructions provided by the container manufacturer are followed.

11.7.4 Maximum Quantity.
The maximum total quantity of liquid oxygen permitted in storage and in use in a patient bed location or patient care vicinity shall be 120 L (31.6 gal), provided that the patient bed location or patient care vicinity, or both, are separated from the remainder of the facility by fire barriers and horizontal assemblies having a minimum fire resistance rating of 1 hour in accordance with the adopted building code.

Statement of Problem and Substantiation for Public Input

Chapter 11 has a lot of CGA References; many CGA documents have both mandatory and non-mandatory sections - NFPA 99 cannot have non-mandatory sections.

Issue:
The phrase “the mandatory requirements of….” was missing before references to the CGA documents. This is a part of the CGA requirements and therefore must be added when talking about or listing the requirements.

Proposal:
Add in the phrase “the mandatory requirements of….” Before all references to the documents in Chapter 11.

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Submital Date: Thu Jul 02 21:05:23 EDT 2015
Public Input Number 329 (Chapter 11)

Proposal:
Add in the phrase “the mandatory requirements of….” Before all references to the documents in Chapter 11.

Submitter Substantiation:
Chapter 11 has a lot of CGA References; many CGA documents have both mandatory and non-mandatory sections - NFPA 99 cannot have non-mandatory sections.

The phrase “the mandatory requirements of….” was missing before references to the CGA documents. This is a part of the CGA requirements and therefore must be added when talking about or listing the requirements.
TITLE OF NEW CONTENT
Type your content here ...
11.3.1 The volume of empty cylinders shall not be included in totals used for calculating total gas volumes in sections 11.3.2, 11.3.3 and 11.3.4.

Statement of Problem and Substantiation for Public Input

Existing sections 11.3.1, 11.3.2 and 11.3.3 are vague in terms of how to calculate total gas volume with regard to empty gas cylinders that may be stored in the same locations. It could have been inferred that they should not be included since they don't have any pressurized gas volume, but others might interpret the requirement differently. By adding this section I have tried to make explicit what was only inferred with existing wording.

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Street Address:
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Submittal Date: Sun Jul 05 19:25:17 EDT 2015
Public Input No. 326-NFPA 99-2015 [ Section No. 11.3 ]

11.3 Cylinder and Container Storage Requirements.

11.3.1* Storage for nonflammable gases equal to or greater than 85 m³ (3000 ft³) at STP shall comply with 5.1.3.3.2 and 5.1.3.3.3.

11.3.2* Storage for nonflammable gases greater than 8.5 m³ (300 ft³), but less than 85 m³ (3000 ft³), at STP shall comply with the requirements in 11.3.2.1 through 11.3.2.8.

11.3.2.1 Storage locations shall be outdoors in an enclosure or within an enclosed interior space of noncombustible or limited-combustible construction, with doors (or gates outdoors) that can be secured against unauthorized entry.

11.3.2.2 Oxidizing gases, such as oxygen and nitrous oxide, shall not be stored with any flammable gas, liquid, or vapor.

11.3.2.3 Oxidizing gases such as oxygen and nitrous oxide shall be separated from combustibles or flammable materials by one of the following:
   (1) Minimum distance of 6.1 m (20 ft)
   (2) Minimum distance of 1.5 m (5 ft) if the entire storage location is protected by an automatic sprinkler system designed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems
   (3) A gas cabinet constructed per NFPA 30, Flammable and Combustible Liquids Code, or NFPA 55, Compressed Gases and Cryogenics Fluids Code, if the entire storage location is protected by an automatic sprinkler system designed in accordance with NFPA 13

11.3.2.4 Gas cylinder and cryogenic liquid container storage shall comply with 5.1.3.3.2 and 5.1.3.3.3.

11.3.2.5 Cylinder and container storage locations shall comply with 5.1.3.2.12 with respect to temperature limitations.

11.3.2.6 Cylinder or container restraints shall comply with 11.6.2.3.

11.3.2.7 Smoking, open flames, electric heating elements, and other sources of ignition shall be prohibited within storage locations and within 6.1 m (20 ft) of outside storage locations.

11.3.2.8 Cylinder valve protection caps shall comply with 11.6.2.3.

11.3.3 Storage for nonflammable gases with a total volume equal to or less than 8.5 m³ (300 ft³) shall comply with the requirements in 11.3.3.1 and 11.3.3.2.

11.3.3.1 Individual cylinder storage associated with patient care areas, not to exceed 2100 m² (22,500 ft²) of floor area, shall not be required to be stored in enclosures.

11.3.3.2 Precautions in handling cylinders specified in 11.3.3.1 shall be in accordance with 11.6.2.

3. Small-size (A, B, D, or E) cylinders

11.3.4.1 When small-size (A, B, D, or E) cylinders are in use, they shall be attached to a cylinder stand or to medical equipment designed to receive and hold compressed gas cylinders.

11.3.4.2 Individual small-size (A, B, D, or E) cylinders available for immediate use in patient care areas shall not be considered to be in storage.

11.3.5 Cylinders shall not be chained to portable or movable apparatus such as beds and oxygen tents.

11.3.6 Signs.

11.3.6.1 A precautionary sign, readable from a distance of 1.5 m (5 ft), shall be displayed on each door or gate of the storage room or enclosure.

11.3.6.2 The sign shall include the following wording as a minimum:

CAUTION
OXIDIZING GAS(ES) STORED WITHIN
NO SMOKING

Statement of Problem and Substantiation for Public Input

Section 11.3.3 says “Storage for nonflammable gases with a total volume equal to or less than 8.5 m³ (300 ft³) shall comply with the requirements in 11.3.3.1 and 11.3.3.2”

Sections 11.3.3.3, 11.3.3.4, & 11.3.3.5 should therefore not be subsections of 11.3.3 and I am proposing to move them out of 11.3.3.
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<tr>
<td><strong>Submitter Full Name:</strong> ALAN LIPSCHTZ</td>
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<tr>
<td><strong>Organization:</strong> HEALTHCARE TECHNOLOGY CONSULTI</td>
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<tr>
<td><strong>Affiliation:</strong> AAMI</td>
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<td><strong>Street Address:</strong></td>
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<td><strong>Submittal Date:</strong> Thu Jul 02 20:47:55 EDT 2015</td>
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11.3.3 Storage for nonflammable gases with a total volume equal to or less than 8.5 m³ (300 ft³) shall comply with the requirements in 11.3.3.1 and 11.3.3.2.

11.3.3.1 Individual cylinder storage associated with patient care areas, not to exceed 2100 m² (22,500 ft²) of floor area, shall not be required to be stored in enclosures.

11.3.3.2 Precautions in handling cylinders specified in 11.3.3.1 shall be in accordance with 11.6.2.

11.3.4 Small-size (A, B, D, or E) cylinders

11.3.4.1 When small-size (A, B, D, or E) cylinders are in use, they shall be attached to a cylinder stand or to medical equipment designed to receive and hold compressed gas cylinders.

11.3.4.2 Individual small-size (A, B, D, or E) cylinders available for immediate use in patient care areas shall not be considered to be in storage.

11.3.5 Cylinders shall not be chained to portable or movable apparatus such as beds and oxygen tents.

Submitter Substantiation:

Section 11.3.3 says "Storage for nonflammable gases with a total volume equal to or less than 8.5 m³ (300 ft³) shall comply with the requirements in 11.3.3.1 and 11.3.3.2" Sections 11.3.3.3, 11.3.3.4, & 11.3.3.5 should therefore not be subsections of 11.3.3 and I am proposing to move them out of 11.3.3.
**Public Input No. 403-NFPA 99-2015 [Sections 11.3.1, 11.3.2]**

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<td>11.3.1*</td>
</tr>
<tr>
<td>Storage for nonflammable gases equal to or greater than $8.5 \text{ m}^3$ ($300 \text{ ft}^3$), but less than $85 \text{ m}^3$ ($3000 \text{ ft}^3$) at STP shall comply with 5.1.3.3.2 and 5.1.3.3.3.</td>
</tr>
<tr>
<td>11.3.2*</td>
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<tr>
<td>Storage for nonflammable gases greater than $8.5 \text{ m}^3$ ($300 \text{ ft}^3$), but less than $85 \text{ m}^3$ ($3000 \text{ ft}^3$) at STP shall comply with the requirements in 11.3.2.1 through 11.3.2.8.</td>
</tr>
</tbody>
</table>

11.3.2.1
Storage locations shall be outdoors in an enclosure or within an enclosed interior space of noncombustible or limited-combustible construction, with doors (or gates outdoors) that can be secured against unauthorized entry.

11.3.2.2
Oxidizing gases, such as oxygen and nitrous oxide, shall not be stored with any flammable gas, liquid, or vapor.

11.3.2.3
Oxidizing gases such as oxygen and nitrous oxide shall be separated from combustibles or flammable materials by one of the following:

1. Minimum distance of 6.1 m (20 ft)
2. Minimum distance of 1.5 m (5 ft) if the entire storage location is protected by an automatic sprinkler system designed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems
3. A gas cabinet constructed per NFPA 30, Flammable and Combustible Liquids Code, or NFPA 55, Compressed Gases and Cryogenics Fluids Code, if the entire storage location is protected by an automatic sprinkler system designed in accordance with NFPA 13

11.3.2.4
Gas cylinder and cryogenic liquid container storage shall comply with 5.1.3.3.2 and 5.1.3.3.3.

11.3.2.5
Cylinder and container storage locations shall comply with 5.1.3.2.12 with respect to temperature limitations.

11.3.2.6
Cylinder or container restraints shall comply with 11.6.2.3.

11.3.2.7
Smoking, open flames, electric heating elements, and other sources of ignition shall be prohibited within storage locations and within 6.1 m (20 ft) of outside storage locations.

11.3.2.8
Cylinder valve protection caps shall comply with 11.6.2.3.

**Statement of Problem and Substantiation for Public Input**

The way this section originally read, the intermediate sized storage locations (8.5 m3 (300 ft3), but less than 85 m3 (3000 ft3)) had more restrictions than the largest sized storage locations.

If the committee accepts the logic of my comment, it will make the most sense if the revised sections 11.3.1 and 11.3.2 (and all of its subsections) are reversed so that the largest sized locations (with the most restrictions) go first, the intermediate sized locations go next (with a subset of restrictions from the largest locations) and the smallest locations (existing section 11.3.3) goes last.

**Submitter Information Verification**

Submitter Full Name: ALAN LIPSCHULTZ
Organization: HEALTHCARE TECHNOLOGY CONSULTI
Affiliation: AAMI
Street Address:
City:
State:
Zip:
Submittal Date: Sun Jul 05 19:10:56 EDT 2015
11.3.3.1 Individual cylinder storage associated with patient care areas, not to exceed 2100 m² (22,500 ft²) of floor area, shall not be required to be stored in enclosures.

Statement of Problem and Substantiation for Public Input

There are several reasons for proposing the change. First, it is presumed that the 22,500 sq. ft. area is based upon the maximum area of a smoke compartment as traditionally permitted by NFPA 101. However, not all smoke compartments are 22,500 sq. ft. and there have been proposed changes to increase the permitted area of a smoke compartment. Therefore, if the intent truly is to apply to smoke compartments, the document should say smoke compartment and not refer to an area. Also, if this is the intent, the restriction actually should be included in Paragraph 11.3.3 not in this paragraph.

If the intent is a density restriction, then why not refer to the density or again state that the 300 cu ft limit applies to any 22,500 sq. ft. area in Paragraph 11.3.3.

Submitter Information Verification

Submitter Full Name: William Koffel
Organization: Koffel Associates, Inc.
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Mar 25 02:15:48 EDT 2015
11.3.3.1
Individual cylinder storage associated with patient care areas, not to exceed 2100 m² (22,500 ft²) of floor area, shall not be required to be stored in enclosures.

Statement of Problem and Substantiation for Public Input

NFPA 101 has for many years defined the maximum permissible size of a smoke compartment as 22,500 ft². They had proposed increasing this number to 40,000 ft² last cycle before it was rejected at annual meeting. Change wording to refer to appropriate section of NFPA 101 rather than a specific square footage. Calculating the square footage is also inappropriate and burdensome when the intention is to not cross smoke compartments.

Submitter Information Verification

Submitter Full Name: ALAN LIPSCHULTZ
Organization: HEALTHCARE TECHNOLOGY CONSULTI
Affiliation: AAMI
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 02 20:54:51 EDT 2015
11.3.3.1
Individual cylinder storage associated with patient care areas, not to exceed 2100 m² (22,500 ft²) of floor area, shall not be required to be stored in enclosures.

Statement of Problem and Substantiation for Public Input
The term "patent care area" is no longer used in NFPA 99. The term is replaced by "patent care space", see 3.3.127.

Related Public Inputs for This Document

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<tr>
<th>Related Input</th>
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<td>Public Input No. 401-NFPA 99-2015 [Section No. A.11.5.1.1.2]</td>
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Submitter Information Verification
Submitter Full Name: GARY BECKSTRAND
Organization: UTAH ELECTRICAL JATC
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Sun Jul 05 13:13:11 EDT 2015
11.3.3.1
Individual cylinder storage associated with patient care areas space, not to exceed 2100 m² (22,500 ft²) of floor area, shall not be required to be stored in enclosures.

Statement of Problem and Substantiation for Public Input

The term "patient care area" is no longer used in NFPA 99. The term is replaced by "patient care space", see 3.3.127.

Related Public Inputs for This Document

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Submitter Information Verification

Submitter Full Name: GARY BECKSTRAND
Organization: UTAH ELECTRICAL JATC
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Sun Jul 05 13:25:53 EDT 2015
11.3.3.4
Individual small-size (A, B, D, or E) cylinders available for immediate use in patient care space shall not be considered to be in storage.

Statement of Problem and Substantiation for Public Input

The term "patient care area" is no longer used in NFPA 99. The term is replaced by "patient care space", see 3.3.127.

Related Public Inputs for This Document

- Related Input: Public Input No. 397-NFPA 99-2015 [Section No. 11.3.3.1]

Submitter Information Verification

Submitter Full Name: GARY BECKSTRAND
Organization: UTAH ELECTRICAL JATC
Street Address:
City:
State:
Zip:
Submittal Date: Sun Jul 05 13:27:38 EDT 2015
11.3.4.1
A precautionary sign, readable from a distance of 1.5 m (5 ft), shall be displayed on each door or gate of the required storage room or enclosure.

Statement of Problem and Substantiation for Public Input

Less than 300 cu ft of gas per 22,500 sq ft is permitted to be stored WITHOUT an enclosure (NFPA 99 §11.3.3.1). Current wording requires signage on any storage room or enclosure, regardless of the amount of gas stored within. This would result in signage on med rooms, soiled utility rooms, clean utility rooms, etc., which are not intended for storage of gas in excess of 300 cu ft. Proposed change limits the signage requirement to areas intended to store greater than 300 cu ft.

Submitter Information Verification

Submitter Full Name: ALLISON ELLIS
Organization: KOFFEL ASSOC INC
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 25 10:50:19 EDT 2015
11.4.2.1
Oxygen-delivery equipment intended to rest on the floor shall be equipped with a base designed to render the entire assembly stable during storage, transport, and use. If casters are used, they shall conform to Class C of U.S. Government Commercial Standard 223-59, Casters, Wheels, and Glides for Hospital Equipment.

Statement of Problem and Substantiation for Public Input


Submitter Information Verification

Submitter Full Name: ALAN LIPSCHULTZ
Organization: HEALTHCARE TECHNOLOGY CONSULTI
Affiliation: AAMI
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Jul 02 19:59:22 EDT 2015
11.4.3.2 Medical Devices

Medical devices not for patient care and requiring oxygen USP shall meet the following:

1. Be listed for the intended purpose by the United States Food and Drug Administration
2. Be under the direction of a licensed medical professional, if connected to the piped distribution system
3. Not be permanently attached to the piped distribution system
4. Be installed and used per the manufacturer’s instructions
5. Be equipped with a backflow prevention device

Statement of Problem and Substantiation for Public Input

Chapter 5 clearly prohibits non patient care medical devices from being connected (permanently or temporarily) to the medical gas piped distribution systems. These systems are intended for patient care ONLY. This section should be deleted to eliminate any confusion.

Submitter Information Verification

Submitter Full Name: JONATHAN WILLARD
Organization: ACUTE MEDICAL GAS SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 06 14:08:18 EDT 2015
11.5.2.5 Ambulatory Patients.
Ambulatory patients on oxygen therapy shall be permitted access to any flame- and smoke-free areas within the health care facility.

Statement of Problem and Substantiation for Public Input
Changing "all" to "any" because one reader of this section interpreted "all" to mean that the facility couldn't declare a smoke-free, flame-free area off limits to an ambulatory patient on oxygen therapy.

Submitter Information Verification
Submitter Full Name: ALAN LIPSCHULTZ
Organization: HEALTHCARE TECHNOLOGY CONSULTING
Affiliation: AAMI
Street Address:
City:
State:
Zip:
Submittal Date: Sun Jul 05 18:54:13 EDT 2015
Special Precautions - Storage of Cylinders and Containers
Inventory control shall be maintained for full and empty nitrous oxide cylinders. Secured access to the nitrous oxide cylinders shall be maintained.

Statement of Problem and Substantiation for Public Input

In CGA P-50, Site Security Standard, any quantity of nitrous oxide is a chemical of concern (COC)/chemical of interest (COI) Tier 4. CGA P-50 section 7.8 provides requirements for COC/COI storage.

Submitter Information Verification

Submitter Full Name: KAREN KOENIG
Organization: CGA
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Jun 15 16:06:13 EDT 2015
Whole-body hyperthermia/hypothermia units should be powered from a separate branch circuit.

Two possible means of meeting the requirement of this section:

1. use of a circuit breaker incorporated into the Multiple Outlet Connection rated at 75% of the ampacity rating of the flexible cord;
2. administrative actions (e.g. education, signs)

This list is not to suggest that other means are not acceptable.

Statement of Problem and Substantiation for Public Input

Although existing text has the word "should" in it, it is phrased as a definite recommendation and not explanatory material. Since it is not known in advance where Whole-body hyperthermia/hypothermia units will be used, every Operating Room and ICU room would require a dedicated branch circuit. I do not find this to be a reasonable recommendation.

This requirement has generated lots of confusion in the field as to how to comply. Suggested revised text may alleviate some of that confusion.

Submitter Information Verification

Submitter Full Name: ALAN LIPSCHULTZ
Organization: HEALTHCARE TECHNOLOGY CONSULTING LLC
Affiliation: (AAMI) Association for the Advancement of Medical Instrumentation
Street Address: 
City: 
State: 
Zip: 

Submittal Date: Wed May 06 10:16:12 EDT 2015
Public Input No. 104-NFPA 99-2015 [ Section No. A.10.2.3.6(4) ]

Statement of Problem and Substantiation for Public Input

The existing Appendix material is irrelevant to the section to which it is attached.

Submitter Information Verification

Submitter Full Name: ALAN LIPSCHULTZ
Organization: HEALTHCARE TECHNOLOGY CONSULTING LLC
Affiliation: AAMI (Association for the Advancement of Medical Instrumentation)
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 06 11:57:53 EDT 2015
A.11.5.1.1.2
Outside of a patient care room space, 11.5.1.1.2 prohibits sources of open flames within the site of intentional expulsion [1 ft (0.3 m)] of a nasal cannula. No sources of open flame are permitted within the area of administration [15 ft (4.3 m)] for other types of oxygen delivery equipment or in patient care rooms (see A.11.5.1.3).

The amount of oxygen delivered by a nasal cannula is limited. One foot (0.3 m) is sufficient separation from an oxygen-enriched atmosphere produced by a nasal cannula, which is oxygen delivery equipment used outside of patient care area space. In the open air, dilution goes to ambient levels (not oxygen-enriched atmosphere) within a few inches of the cannula openings, but 12 in. (300 mm) provides an adequate safety factor. Other oxygen delivery equipment, such as masks, are not included since masks would not typically be associated with mobile patients in health care facilities and can deliver greater quantities of oxygen than nasal cannula.

The household-style nursing homes that include kitchens intended for residents’ use and enclosed gas fireplaces present a source of flame ignition to which residents will be exposed. Residents utilizing a nasal cannula would potentially not be allowed to participate in the cooking because it would place the cooking flame within the site of intentional expulsion. However, they would be allowed in the kitchen area to assist in preparing the food and to socialize with other residents and staff in the kitchen similar to what happens in the kitchens of residential environments.

The primary concern is that flame-producing equipment exists in many places in a nursing home and that it would be impractical to maintain a resident with a nasal cannula a minimum of 15 ft (4.3 m) (Area of Administration) away from the flame-producing equipment. Typical flame-producing equipment found in a nursing home includes the following:

(1) Candles in chapels
(2) Open kitchens using gas cooking equipment
(3) Fireplaces
(4) Fuel-fired heating equipment
(5) Private family dining rooms using fuel-fired equipment
(6) Canned cooking fuel (e.g., used under chafing dishes)

Statement of Problem and Substantiation for Public Input
The term “patient care area” is no longer used in NFPA 99. The term is replaced by “patient care space”, see 3.3.127.

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Submitter Full Name: GARY BECKSTRAND
Organization: UTAH ELECTRICAL JATC
Street Address:               
City:                        
State:                       
Zip:                         
Submittal Date: Sun Jul 05 13:31:04 EDT 2015