Enclosed is the agenda package for the Report on Comments (ROC) meeting for the Medical Equipment Technical Committee of NFPA 99, *Healthcare Facilities Code*. It is imperative that you review the comments in advance, and if you have alternate suggestions, please come prepared with the proposed changes and respective substantiations. In addition, if there are any specific discussion items that are not included on the agenda or in the public comments, please submit a copy to NFPA staff for distribution to the committee at least five days prior to the meeting.

Please feel free to contact Carol Sances for administrative questions at (617) 984-7951. For technical questions, please contact Richard Bielen at (617) 984-7279 or Jonathan Levin at (617) 984-7245. You can also reach Richard via e-mail at RBielen@nfpa.org and Jonathan at JLevin@nfpa.org. We look forward to working with everyone at the Westin Washington Dulles Airport Hotel in Herndon, VA.
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Technical Committee on Medical Equipment

ROC Meeting
September 30, 2010
8:00 am – 5:00 pm
Westin Washington Dulles Airport Hotel
252 Wassser Terrace
Herndon, VA 20171
(703) 793-3366

AGENDA

Thursday, September 30, 2010

1. Call to Order – 8:00 AM
2. Introductions and Attendance
3. Committee Member Status and Update of Membership Roster
4. Review Proposed Agenda
5. NFPA Staff Presentation
6. Chairman Comments
7. Approval of A2011 ROP Meeting Minutes
8. Act on Public Comments
9. Generate Committee Comments
10. Adjourn Meeting – 5:00 PM
### Distribution by %

**HEA-MED  Medical Equipment**

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Representation</th>
<th>Class</th>
<th>Office</th>
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<tbody>
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<td>William C. Fettes</td>
<td>Airgas, Inc.</td>
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<td>IM</td>
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<tr>
<td>Alan Lipschultz</td>
<td>Christiana Care Health Services</td>
<td>AAMI</td>
<td>M</td>
<td>Chair</td>
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<tr>
<td>Keith Ferrari</td>
<td>Praxair</td>
<td>CGA</td>
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<tr>
<td>Michael E. Brousseau</td>
<td>Intertek Testing Services</td>
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<td>Joseph P. Murnane, Jr.</td>
<td>Underwriters Laboratories Inc.</td>
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<td>Susan E. Dorsch</td>
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<tr>
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<td>Texas Woman’s University</td>
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<td>B&amp;R Compliance Associates</td>
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<td>Luther Midelfort Mayo Health</td>
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<tr>
<td>Ezra R. Safdie</td>
<td>US Department of Veterans Affairs</td>
<td>USVA</td>
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<td>W. Thomas Schipper</td>
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- **Voting Number 1**: Percent 8%
- **Voting Number 2**: Percent 15%
- **Voting Number 3**: Percent 23%
- **Voting Number 4**: Percent 31%
- **Voting Number 3**: Percent 23%

**Total Voting Number**: 13
Attendees:

<table>
<thead>
<tr>
<th>November 23</th>
<th>January 19</th>
<th>February 4</th>
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<tr>
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<td>John Collins (Alternate)</td>
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<td>Mike Schmidt (Alternate)</td>
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<td>Richard Bielen</td>
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<td>Jonathan Levin</td>
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1. Chairman Alan Lipschultz called the meeting to order at 10:30 AM on November 23, 2009. He stated we have public proposals to review for this meeting.

2. Richard Bielen gave the staff report. He reviewed the dates of the cycle and the actions the committee can take at the ROP meeting.

3. The minutes of the previous ROC meeting were approved.

4. The committee then acted on the public and committee proposals. In order to complete action on public proposals, second and third Windows Live meetings were held on January 19, 2010 and February 4, 2010. See the ROP for the official action on the proposals.

5. There was no old business.

6. There was no new business.

7. Next meeting. TBD in the September/October timeframe

8. Meeting adjourned at 5:00 pm on February 4, 2010.
**NFPA 99 Revision Cycle**  
**Annual 2011**

<table>
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<th>Event</th>
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<tbody>
<tr>
<td>Comment Closing Date</td>
<td>September 3, 2010</td>
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<tr>
<td>Final Date for ROC Meeting</td>
<td>November 5, 2010</td>
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<tr>
<td>Ballots Mailed to TC</td>
<td>November 19, 2010</td>
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<tr>
<td>ROC Published</td>
<td>February 2, 2011</td>
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<tr>
<td>Intent to Make a Motion Closing (NITMAM)</td>
<td>April 8, 2011</td>
</tr>
<tr>
<td>Issuance of Consent Document (No NITMAMs)</td>
<td>May 31, 2011</td>
</tr>
<tr>
<td>NFPA Annual Meeting Boston, MA</td>
<td>June 2011</td>
</tr>
<tr>
<td>Issuance of Document with NITMAM</td>
<td>August 11, 2011</td>
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</table>
Note from the Staff Liaison

Dear Technical Committee Members:

We are very pleased that you will be participating in the processing of the 2012 Edition of NFPA 99. Development of the Code would not be possible without the participation of volunteers like you.

Materials You Will Need to Have for the Meeting

- Agenda package
- A2011 ROP
- Committee Officers' Guide (Chairs)
- Roberts’ Rules of Order (Chairs – abbreviated version may be found in the Committee Officer’s Guide)

"Nice to Have" Materials

- NFPA Annual Directory
- NFPA Manual of Style
- Prepared Committee Comments (If applicable)

Preparation

Prepared actions and statements will clarify your position and provide the committee with a starting point. Prepared actions and statements really help expedite the progress of the meeting.

Getting Things Done

Comments

Only one posting of comments will be made; it will be arranged in section/order and will be pre-numbered. This will be posted to the NFPA e-committee website. If you have
trouble accessing the website please contact Carol Sances at CSances@nfpa.org. Please bring the comments to the committee meeting.

The processing schedule to be followed by the committee is outlined in the schedule in this package. As the schedule is very tight, no extensions of the deadline for receipt of completed ballots or extensions of the period to change vote will be possible.

It is therefore suggested that those of you who must consult with others regarding your ballot do so based on the material passed out at the meeting, and your meeting notes. Do not wait for receipt of the ballot materials from NFPA.

**Regulations and Operating Procedures**

All actions at and following the committee meetings will be governed in accordance with the NFPA Regulations Governing Committee Projects. The latest Regulations (as of this printing) appear on pages 10-28 of the 2010 NFPA Directory.

All committee actions will be in accordance with the NFPA Regulations Governing Committee Projects. The style of NFPA 99 will comply with the Manual of Style for NFPA Technical Committee Documents. Failure to comply with these rules could result in challenges to the standards-making process. A successful challenge on procedural grounds could prevent or delay publication of NFPA 99. Consequently, committee's must follow the regulations and procedures.

**Processing Comments**

All comments must be acted upon. If a comment does not comply with Section 4.4.3 of the NFPA Regulations Governing Committee Projects (an incomplete comment), the committee may reject the comment. However, any of the standard actions may be taken. Please make sure that the committee's action and the committee's statement result in a complete action that can be readily understood.
Committee Actions

The following are the actions permitted by the Regulations Governing Committee Projects for disposition of comments. Please note that comments can be held for further study.

Accept

The committee accepts the comment exactly as written. Only editorial changes such as paragraph and section numbering, and corrections to spelling, capitalization, and hyphenation may be made.

If a comment is accepted without a change of any kind, except for editorial changes, the committee can simply indicate acceptance. The committee should add a committee statement explaining the action if, for example the committee does not agree with all of the substantiation or supporting data or has a number of different reasons for acceptance than those stated in the substantiation or supporting data. The absence of such a statement could mislead the reader by giving the impression that the committee agreed with all of the substantiation for the comment.

Reject

The comment is rejected by the committee. If the principle or intent of the comment is acceptable in whole or in part, the comment should not be rejected, it should be accepted in principle or accepted in principle in part. A complete reason for rejection of the comment must be supplied in the committee statement.

Accept in Principle

Accept the comment with a change in wording. The committee action must indicate specifically what action was taken to revise the proposed wording, and where the wording being revised is located (i.e., in the proposed wording or in the document). If the details are in the action on another comment, the committee action may simply indicate "Accept in Principle" but reference should then be made in the committee statement to the specific comment detailing the action.
**Accept in Part**

If part of a comment is accepted without change and the remainder is rejected, the comment should be "Accepted in Part." The committee action must indicate what part was accepted and what part was rejected and the committee statement must indicate its reasons for rejecting that portion.

**Accept in Principle in Part**

This is a combination of "Accept in Principle" and "Accept in Part" as shown above.

**Hold**

Comments can be held and processed as a proposal during the next revision cycle provided that one of the following conditions is met:

(a) The comment introduces a concept that has not had public review by being included in a related proposal as published in the Report on Proposals.

(b) The comment would change the text proposed by the TC to the point that the TC would have to restudy the text of the Report on Proposals or other affected parts of the Document.

(c) The comment would propose something that could not be properly handled within the time frame for processing the report.

**Committee Statements**

Any comment that is "Accepted in Principle", "Accepted in Part", "Accepted in Principle in Part" or "Rejected" must include a committee statement, preferably technical in nature that provides the reasons for the action.

References to the requirements of other documents as a reason for rejection should be to the specific sections of the document including the requirements. If there is more than one such section, the reference should include at least one, identified as an example.

It is a violation of the regulations for a committee to reject a comment simply because it accepted a different comment on the same subject. Reference in the committee statement
to another committee action is inappropriate unless the referenced comment contains all of the applicable technical justification for the action.

If the rejection or change was for the same reason that another comment was rejected or changed, the committee statement may refer to that comment giving the same reason for rejection or change. Please verify that cross references to other comments are correct.

The committee statement should not refer to another committee statement which, in turn, refers to some other committee statement. There may be a situation where the committee will want to refer to two, three, or more committee statements if they are all appropriate.

When the committee develops a committee action for a comment that is accepted in principle, the rationale must indicate why the wording submitted was not accepted. This reason should be technical in nature, unless the committee has simply rewritten the submitter's text, in which case the committee can state that the proposed wording should meet the submitter's intent.

The committee statement on a comment that is accepted in part should indicate specifically why that part of the comment was not accepted.

**Easy Procedures for Handling a Motion**

NFPA Committee Meetings are conducted in accordance with Roberts' Rules of Order. In order for a comment to be discussed, a motion must be made. A simplified procedure for discussion of motions is as follows:

**Member**

- Member Addresses the Chair
- Receives Recognition from the Chair
- Introduces the Motion
- (Another Member) Seconds the Motion.
Chair (Presiding Officer)

- States the Motion
- Calls for Discussion
- Takes the vote
- Announces the Result of the Vote

It is imperative that you review the comments before the meeting and develop proposed actions and statements. These prepared actions and statements will clarify your position and provide the committee with a starting point. Prepared actions and statements really help expedite the progress of the meeting.

Balloting Dos and Don'ts

Either fax or mail your ballot - Please do not do both. Don't return the entire package; just return the appropriate ballot page(s) and explanation of votes.

Alternate Members

At the end of each code cycle, the Standards Council reviews records of all members regarding their participation in the standards-making process. Therefore, it is important for alternate members to remember that return of ballots is expected, even though they know that their principal member will be attending meetings and returning their ballots.

General Procedures for Meetings

- Use of tape recorders or other means capable of producing verbatim transcriptions of any NFPA Committee Meeting is not permitted.
- Attendance at all NFPA Committee Meetings is open.
- All guests must sign in and identify their affiliation.
- Participation in NFPA Committee Meetings is generally limited to committee members and NFPA staff. Participation by guests is limited to individuals, who have previously requested of the chair time to address the committee on a particular item, or individuals who wish to speak regarding public proposals or comments that they submitted.
• The chairman reserves the right to limit the amount of time available for any presentation.

• No interviews will be allowed in the meeting room at any time, including breaks.

• All attendees are reminded that formal votes of committee members will be secured by letter ballot. Voting at this meeting is used to establish a sense of agreement, but only the results of the formal letter ballot will determine the official position of the committee on any comment.

• Note to Special Experts: Particular attention is called to Section 3.3(e) of the NFPA Guide for the Conduct of Participants in the NFPA Codes and Standards Development Process in the NFPA Directory that directs committee members to declare their interest representation if it is other than their official designation as shown on the committee roster, such as when a special expert is retained and represents another interest category on a particular subject. If such a situation exists on a specific issue or issues, the committee member shall declare those interests to the committee, and refrain from voting on any proposal, comment, or other matter relating to those issues.

• Smoking is not permitted at NFPA Committee Meetings.
The terms used in 1.3.5 need to be defined in chapter 3 of the document as follows:

3.3.134 Patient Care Room. Any room of a health care facility wherein patients are intended to be examined or treated. (ELE)

3.3.134.1 Critical Care Rooms (Category 1 Room). Rooms in which failure of equipment or systems is likely to cause major injury or death of patients or caregivers.

3.3.134.2 General Care Rooms (Category 2 Room). Rooms in which failure of equipment or systems is likely to cause minor injury to patients or caregivers.

3.3.134.3 Basic Care Rooms. Rooms in which the failure of equipment or systems is not likely to cause injury to the patients or caregivers but can cause patient discomfort.

3.3.134.4 Support Room (Category 4 Room) Rooms in which failure of equipment or systems is likely not to have a physical impact on the patients or caregiver.

Substantiation: The draft ROP included these terms, however there was no related proposal that included those terms or this section. It may have been missed when it was converted from the 2009 ROC. Without the definitions the document will be difficult to understand in regards to the different categories.

The scope of NFPA 99 does include all levels of anesthesia, therefore the definition must be all inclusive and the TC should review and change their action at the ROC stage. All the TC’s should review their categories of patient care where anesthetics are used.

The draft ROP included these terms, however there was no related proposal that included those terms or this section. It may have been missed when it was converted from the 2009 ROC. Without the definitions the document will be difficult to understand in regards to the different categories.
Anesthetizing Location. Any area of a facility that has been designated to be used for the administration of inhalational anesthetic agents.

Substantiation: Mostly an editorial change. The word should be changed to "inhalation" not "inhalational"

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Minimal Sedation (Anxiolysis) - a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected.

Moderate Sedation/Analgesia (Conscious Sedation) - a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

Deep Sedation/Analgesia - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

General Anesthesia - a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired. It should be noted that these are not static conditions. Minimal sedation can easily become moderate sedation, and moderate sedation can progress to deep sedation or general anesthesia.

Substantiation: There is a need to define all the levels of sedation which are relevant with the new Category system used by NFPA 99.

This definition is a standard definition used by the American Society of Anesthesiologists.
99- Log #84 HEA-MED
(3.3.131 Oxygen USP)

Submitter: Keith Ferrari, Praxair
Comment on Proposal No: 99-63
Recommendation: Revise text to read as follows:
   3.3.131.1 Oxygen USP. Oxygen complying as a minimum with the Quality Verification Levels (QVL) of Medical USP.
Substantiation: Nitrogen is defined to meet NF under 3.3.120.1.
   Medical Air is defined under 5.1.3.5.1(2) to meet the requirements of medical air USP.
   Oxygen USP and Nitrogen NF is listed under the definition of Medical Air 3.3.106. And also under 5.1.3.5.1(1), but Oxygen USP is not defined under 3.3.131.
   For clarity, understanding and to reduce Medical Gas Mix-ups, USP should be included in the definition to emphasis that compressed medical gases, including compressed medical oxygen and liquid oxygen, are drug products regulated under FDA 21 CFR 210 and 211.
   Also, all medical gas that are not defined as USP/NF, should include a similar statement as stated above.
   This is not original material; its reference/source is as follows:
   USP, FDA

99- Log #113 HEA-MED
(3.3.134 Patient Care Room)

Submitter: Chad E. Beebe, American Society for Healthcare Engineering
Comment on Proposal No: N/A
Recommendation: Revise text to read as follows:
   3.3.134* Patient Care Room. Any room of a health care facility wherein patients are intended to be examined or treated. (ELE)
   3.3.134.3* Basic Care Rooms. Rooms in which the failure of equipment or systems is not likely to cause injury to the patients or caregivers but can cause patient discomfort.
   3.3.134.1* Critical Care Rooms (Category 1 Room). Rooms in which failure of equipment or systems is likely to cause major injury or death of patients or caregivers.
   3.3.134.2* General Care Rooms (Category 2 Room). Rooms in which failure of equipment or systems is likely to cause minor injury to patients or caregivers.
   3.3.134.3* Basic Care Rooms. Rooms in which the failure of equipment or systems is not likely to cause injury to the patients or caregivers but can cause patient discomfort.
   3.3.134.4 Support Room (Category 4 Room). Rooms in which failure of equipment or systems is likely not to have a physical impact on the patients or caregiver.

Substantiation: There needs to be a room type for category 4 rooms otherwise there only needs to be 3 categories. None of the first three categories describe support areas which, based on review of the proposed document should not be lumped in with Basic care rooms. Adding support rooms to category 4 clarifies where other spaces fall within the new category system. to make it more clear - the categories should be listed in category order instead of alphabetical.
### Log #9 HEA-MED
(3.3.139 Patient-Care-Related Electrical Appliance)

**Final Action:**

**Submitter:** Technical Correlating Committee on Health Care Facilities, 99-65

**Comment on Proposal No:** 99-65

**Recommendation:** The TC needs to develop a better committee statement for the reject. It doesn’t explain why it may create confusion.

**Substantiation:** This is a direction from the Technical Correlating Committee on Health Care Facilities in accordance with 3.4.2 and 3.4.3 of the Regulations Governing Committee Projects.

### Log #196 HEA-MED
(3.3.139 Patient-Care-Related Electrical Appliance)

**Final Action:**

**Submitter:** Burton R. Klein, Burton Klein Associates 99-65, 99-66

**Comment on Proposal No:** 99-65

**Recommendation:** Accept proposal 99-66, but revise “in a patient care vicinity” to “in a patient care area.”

**Substantiation:**
1. TC has not stated, in its substantiation for action on proposal 99-65, what deleting “in a patient-care vicinity” may cause a conflict with.
2. TC has not stated, in its substantiation for action on proposal 99-65, why deleting phrase “in a patient-care vicinity” may be confusing.
3. Since some equipment in a laboratory might be ‘diagnostic-related’, at least extending definition to encompass a patient-care area will assure the equipment intended for direct patient-care is included. However, present definition means that patient monitoring equipment at a nursing station does come under the definition, and thus doesn’t have to meet requirements.

### Log #258 HEA-MED
(3.3.139 Patient-Care-Related Electrical Appliance)

**Final Action:**

**Submitter:** David A. Dagenais, Wentworth-Douglass Hospital 99-65

**Comment on Proposal No:** 99-65

**Recommendation:** Revise text to read as follows:

In definition of “patient-care-related electrical appliance,” delete “in patient care vicinity,” so that definition reads, “An electrical appliance that is intended to be used for diagnostic, therapeutic, or monitoring purposes. in a patient care vicinity.”

**Substantiation:** The committee should accept the original proposal or give a better explanation as to why this creates confusion. Even the TCC requested a better committee statement.
99- Log #305 HEA-MED
(3.3.139 Patient-Care-Related Electrical Appliance)

Submitter: John Collins, ASHE
Comment on Proposal No: 99-65
Recommendation: The description "patient care vicinity" is defined in 3.3.135 but there is no reason given to substantiate the distances of 6 feet and 7 feet, 6 inches anywhere in NFPA 99.
Substantiation: The reason for the term "patient care vicinity" with the dimensions defined in 3.3.135 is not given anywhere in NFPA 99. There is an implication that electrical equipment within the dimensional space might harm a patient. The only section in 99 that this might realistically apply is in 5.2.1.5 Protection of Patients with Direct Electrical Pathways to the Heart
There are no instances of any incidents of patient harm from electrical shock documented in the literature. With the accepted manufacturer compliance with IEC 60601-1, there is no reason to assume that someone using an item such as a laptop computer at home will suddenly be in danger using the same device while sitting in a hospital bed.

99- Log #10 HEA-MED
(3.3.158 Relative Analgesia)

Submitter: Technical Correlating Committee on Health Care Facilities,
Comment on Proposal No: 99-67
Recommendation: The scope of NFPA 99 does include all levels of anesthesia, therefore the definition must be all inclusive and the TC should review and change their action at the ROC stage. All the TC's should review their categories of patient care where anesthetics are used.
Substantiation: This is a direction from the Technical Correlating Committee on Health Care Facilities in accordance with 3.4.2 and 3.4.3 of the Regulations Governing Committee Projects.

This is not original material; its reference/source is as follows:
American Society of Anesthesiologists Practice Guideline for Sedation and Analgesia by non-Anesthesiologists.
99- Log #86 HEA-MED
(5.1.3.4.2)

Final Action:

Submitter: Keith Ferrari, Praxair
Comment on Proposal No: 99-159

Recommendation: Delete text as follows:

9.5.3.3 Sterilizers. Equipment using medical grade oxygen from the piped distribution system shall meet the following requirements:

1) Not be permanently attached to the piped distribution systems;
2) Be connected to the piped distribution system using a wall outlet and a flexible hose;
3) Be a medical device which has been listed with the United States Food & Drug Administration;
4) Operate at or below 5 psig (34.5 kPa)

Substantiation: This allowance is in direct conflict with the definition for Patient Medical Gas:

3.3.143 Patient Medical Gas. Piped gases such as oxygen, nitrous oxide, helium, carbon dioxide, and medical air that are used in the application of human respiration and the calibration of medical devices used for human respiration. (PIP)

5.1.3.4.2* Central supply systems for oxygen, medical air, nitrous oxide, and all other patient medical gases shall not be piped to, or used for, any purpose except patient care application. Medical air shall be used only in the application of human respiration, and calibration of medical devices for respiratory application.

All methods of sterilization are intended to kill microorganisms; therefore, one must be mindful that sterilants and sterilizing equipment can be hazardous.

Sterilizer, of any kind, should not be allowed to be connected to a Patient Care Medical Oxygen Piped System. Ozone is very reactive and very hazardous. The NIOSH immediately dangerous to life and health limit for ozone is 5 ppm, much 160 times smaller than the 800 ppm IDLH for ethylene oxide. Documentation for Immediately Dangerous to Life or Health Concentrations (IDLH): NIOSH Chemical Listing and Documentation of Revised IDLH Values (as of 3/1/95) and OSHA has set the PEL for ozone at 0.1 ppm calculated as an eight hour time weighted average (29 CFR 1910.1000, Table Z-1). The Canadian Center for Occupation Health and Safety provides an Excellent summary of the health effects of exposure to ozone. [16] The sterilant gas manufacturers include many safety features in their products but prudent practice is to provide continuous monitoring to below the OSHA PEL to provide a rapid warning in the even of a leak and monitors for determining workplace exposure to ozone are commercially available. People with asthma and others with impaired respiratory systems are particularly susceptible to the effects of ozone. Even healthy persons, if exposed to low concentrations for a few hours while exercising, may experience health problems. I see no problems with a piped oxygen system being used, but not the patient medical oxygen piped system.

This opens the door for connection of devices that could adversely affect patient gas system.

This is not original material; its reference/source is as follows:
USP, FDA, NIOSH, COCOHS

99- Log #16 HEA-MED
(Chapter 8)

Final Action:

Submitter: Technical Correlating Committee on Health Care Facilities,
Comment on Proposal No: 99-381

Recommendation: Clarify the intent only pertains to inspection, maintenance and testing requirements. It is not the intent to upgrade performance requirements for all existing equipment if it does not meet the current standard per 1.3.2.3.

Substantiation: This is a direction from the Technical Correlating Committee on Health Care Facilities in accordance with 3.4.2 and 3.4.3 of the Regulations Governing Committee Projects.
99- Log #203 HEA-MED  
(Chapter 8) 

Final Action:

Submitter: Burton R. Klein, Burton Klein Associates  
Comment on Proposal No: 99-381  
Recommendation:  
1. Accept items 1, 3 and 5 of proposal 99-381.  
2. Revise item 2 (proposed title of new Chapter 9) to read: Requirements for Existing Electrical Equipment.  
3. Revise item 4 (proposed title of existing Chapter 8) to read: Requirements for New Electrical Equipment.  

Substantiation:  
1. The paragraphs listed in the proposal (which would comprise new Chapter 9) relate to actions to be taken after initial testing of electrical equipment. TC may want requirements for new and existing electrical equipment to be the same, but paragraphs listed in proposal don’t apply to new equipment.  
2. & 3. Change to titles of these chapters is to reflect the fact that these chapter cover ‘equipment’, not ‘facilities.’

99- Log #135 HEA-MED  
(8.5.x (New)) 

Final Action:

Submitter: Chad E. Beebe, American Society for Healthcare Engineering  
Comment on Proposal No: 99-386  
Recommendation:  
Add new text to read as follows:  
8.5.x Laser Fire Protection  
Operating rooms utilizing laser technology shall comply with the requirements of NFPA 115, Standard for Laser Fire Protection.  

Substantiation:  
In the current edition of NFPA 115, the document was changed from a recommended practice to a standard. At that point, all of the language within the body of the document contained enforceable language and any recommendations or advisory information has been moved to the annexes.

99- Log #204 HEA-MED  
(Chapter 9) 

Final Action:

Submitter: Burton R. Klein, Burton Klein Associates  
Comment on Proposal No: 99-387  
Recommendation:  
1. Accept items 1, 3 and 5 of proposal 99-387.  
2. Revise item 2 (proposed title of new Chapter 10) to read: Requirements for Existing Gas Equipment.  
3. Revise item 4 (proposed title of existing Chapter 9) to read: Requirements for New Gas Equipment.  

Substantiation:  
1. The paragraphs listed in the proposal (which would comprise new Chapter 10) relate to actions to be taken after initial testing of electrical equipment. TC may want requirements for new and existing electrical equipment to be the same, but paragraphs listed in proposal don’t apply to new equipment.  
2. & 3. Change to titles of these chapters is to reflect the fact that these chapter cover ‘equipment’, not ‘facilities.’

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99- Log #47 HEA-MED Final Action:
(9.5.3.3(2))

Submitter: Jan Ehrenwerth, Yale University
Comment on Proposal No: 99-159
Recommendation: Reject the committee action to allow the sterilizers to be connected directly to the wall outlet of oxygen.

Substantiation: The oxygen delivery system is an essential and vital part of all patient care in the hospital. It is imperative that there is no threat to the safety of the system, no matter how low the risk. Connecting an ozone sterilizer to the oxygen system can not be permitted. Even though the reported (by the manufacturer) risk is small if the device contaminated the oxygen supply with ozone, or lowered the supply pressure, it would be a disaster that would cause serious patient harm or even deaths. Using a separate oxygen cylinder is easy and safe. Cylinders are moved around the hospital all the time without problems. We change dozens of cylinders daily. The risk cited in the substantiation is minimal, and does not justify any risk to the oxygen pipeline system.

This proposal was first voted on by the TC on pipelines, and was overwhelmingly defeated. It was later reassigned to the TC on medical equipment.

99- Log #18 HEA-MED Final Action:
(9.6.1.3.3)

Submitter: Technical Correlating Committee on Health Care Facilities,
Comment on Proposal No: 99-344
Recommendation: The TC should clarify that the tools are only used in the servicing of oxygen equipment.
Substantiation: This is a direction from the Technical Correlating Committee on Health Care Facilities in accordance with 3.4.2 and 3.4.3 of the Regulations Governing Committee Projects.
This is not original material; its reference/source is as follows:
Submitter: Thomas W. Jaeger, Jaeger and Associates, LLC
Comment on Proposal No: 99-417
Recommendation: Delete text to read as follows:
Delete the reference to CGA Pamphlet P-2.7 in Section 9.6.2.3.1(4)
Substantiation: CGA Pamphlet-2.7 contains both mandatory (shall) and recommended (should) language. There is no language or guidance in NFPA 99 to tell the user which portions of CGA-2.7 must be complied with and which portions compliance is not required. NFPA regulations do not permit references in the text to contain none mandatory language and requirements in the text of the reference document. For example Section 5.3 of CGA-2.7 states “Filling and use should occur a minimum of 5 ft. (1.5m) away from electrical appliances such as electrical wheel-chairs, television sets, radio and stereo equipment, air conditioners, fans, electrical razors and hair dryers.”
The first question, is this a recommendation or a requirement since the term should is used? For NFPA proposes should is only a recommendation. Second, if one interprets the laundry list of electrical equipment in the sentence, it would be reasonable to mean any electrical device that could be a source of ignition. It is impossible for a person using portable oxygen equipment moving through a building with electricity to be continually at least 5 ft. away from an electrical source of ignition. It is not enforceable.

CMS surveyors are citing nursing homes if a resident is observed closer than 5 ft. to any electrical piece of equipment while on oxygen. Not only is the facility cited, it is considered to be an “immediate jeopardy” deficiency which comes with an automatic fine and many other penalties such no new residents admitted into the facility.

I suggest that NFPA 99 write its own reasonable and enforceable requirements for the use of small portable liquid oxygen systems in Health Care Facilities in proper language and in compliance with NFPA regulations. Clearly CGA Pamphlet-2.7 is not an appropriate document to be referenced in the text of an NFPA document.

Submitter: Technical Correlating Committee on Health Care Facilities,
Comment on Proposal No: 99-345
Recommendation: The TC should clarify that the tools are only used in the servicing of oxygen equipment.
Substantiation: This is a direction from the Technical Correlating Committee on Health Care Facilities in accordance with 3.4.2 and 3.4.3 of the Regulations Governing Committee Projects.
This is not original material; its reference/source is as follows:

Submitter: Sharon S. Gilyeat, Koffel Associates, Inc.
Comment on Proposal No: N/A
Recommendation: Revise text to read as follows:
This chapter shall apply to the performance, maintenance, and testing of all electrical equipment in health care facilities, as specified in Section 1.3.
Substantiation: This will clarify new vs. existing application, without repeating the requirements in 1.3.
99- Log #271 HEA-MED
(10.2.3.8)

Submitter: Harvey Kostinsky, ECRI Institute
Comment on Proposal No: 99-383
Recommendation: Revise text to read as follows:
(1) The receptacles are an integral part of the equipment assembly, permanently attached to the equipment assembly.
Substantiation: Meaning of “integral part of” is ambiguous and does not reflect the fundamental requirement, that it be permanently attached. The might be misinterpreted to mean that this must be attached by the manufacturer. The hospital may perform this action.

99- Log #272 HEA-MED
(10.2.3.8)

Submitter: Harvey Kostinsky, ECRI Institute
Comment on Proposal No: 99-383
Recommendation: Delete paragraphs (5) and (6) of 10.2.3.8
(5) Leakage current meets the appropriate limit when measured with all devices connected according to 10.3.5.2 or 10.3.5.3.
(6) Means are employed to assure that additional devices or nonmedical equipment cannot be connected to the multiple outlet extension cord after leakage currents have been verified as safe.
Substantiation: This is adequately covered by paragraph 10.3.5.3 of this same proposal.

99- Log #278 HEA-MED
(10.2.3.8)

Submitter: Harvey Kostinsky, ECRI Institute
Comment on Proposal No: 99-383
Recommendation:
Substantiation:

99- Log #64 HEA-MED
(10.2.3(6))

Submitter: Bill Payne, Alamance Regional Medical Center
Comment on Proposal No: N/A
Recommendation: Revise text to read as follows:
(6) Means are employed to assure that additional devices or nonmedical equipment cannot be connected to the multiple outlet extension cord after leakage currents have been verified as safe. Power taps used in conjunction with Isolated Power system will not be subject to this requirement.
Substantiation: 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. Many ORs do not have power booms and even those do not solve the problem. Properly UL listed power taps can be safely used to several pieces of equipment together as long as each tap is plugged in to a different circuit. The increased number of receptacles is not as important as the increase in the number of circuits in an OR.
Add text to read as follows:

*Alcohol based hand rub should be removed from the bedside while O₂ is in use.

9.4.4.2 pneumatic nurse cable, pillow speakers, tv remote, the requirement for these items should be known or referenced from chapter to chapter. Example: The install of system (O₂) goes from cylinder to head wall, but not to resident patient control.

Delete last phrase:

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 or other applicable tests.

"Or other applicable tests" is ambiguous and subject to different interpretations. The required action is adequately described without that phrase. There is no need for the code to specify additional actions that the hospital may decide to employ beyond the requirements of the code.

The leakage current shall not exceed 100 µ A ac or 10 µ A dc for ground wire closed and 500 µ A ac or and 50 µ A dc for ground wire open.

While DC requirements apply to manufacturers, this testing has not routinely been performed by hospitals. There is no evidence that this additional testing is justified.

99- Log #276 HEA-MED (10.3.6.3) Final Action:

Submitter: Harvey Kostinsky, ECRI Institute
Comment on Proposal No: 99-383
Recommendation: 10.3.6.3 The leakage current shall not exceed 100 µ A ac or 10 µ A dc for ground wire closed and 500 µ A ac or 50 µ A dc for ground wire open. [See problem statement.]
Substantiation: The lead leakage current should be related to the type of lead (e.g., CF).

99- Log #236 HEA-MED (10.3.10.2.5) Final Action:

Submitter: Sharon S. Gilyeat, Koffel Associates, Inc.
Comment on Proposal No: N/A
Recommendation: Revise text to read as follows:
Testing Requirements – Fixed and Portable
Substantiation: It appears that this section applies to patient care related electrical appliance and as such should be a sub heading under 10.2. If it applies to both 10.2 and currently 10.3 (non patient care) electrical appliances, then it needs to be moved and clarified as such.

99- Log #277 HEA-MED (10.5.2.3.1) Final Action:

Submitter: Harvey Kostinsky, ECRI Institute
Comment on Proposal No: 99-383
Recommendation: Revise text to read as follows:
10.5.2.3.1 Adapters and extension cords meeting the requirements of 8.4.1.2.5 xxx shall be permitted to be used.
Substantiation: I believe that the reference is old and needs to be updated.

99- Log #279 HEA-MED (10.5.2.3.1) Final Action:

Submitter: Harvey Kostinsky, ECRI Institute
Comment on Proposal No: 99-383
Recommendation:
Substantiation:

99- Log #237 HEA-MED (11.1.1) Final Action:

Submitter: Sharon S. Gilyeat, Koffel Associates, Inc.
Comment on Proposal No: N/A
Recommendation: Revise text to read as follows:
This chapter shall apply to the performance, maintenance, and testing of all electrical equipment in health care facilities, as specified in Section 1.3.
Substantiation: This will clarify new vs. existing application.

99- Log #182 HEA-MED
(11.3.2.4) Final Action:

Submitter: Max Hauth, Hauth Health Care Consultants, Inc.
Comment on Proposal No: 99-402
Recommendation: Revise text to read as follows:
Gas cylinders and cryogenic liquid containers storage shall comply with 5.1.3.1.12.
Substantiation: Does this include helium which is found in nursing homes, alf's, and hospitals?
Note cylinder size.

99- Log #238 HEA-MED
(11.3.2.6) Final Action:

Submitter: Sharon S. Gilyeat, Koffel Associates, Inc.
Comment on Proposal No: N/A
Recommendation: Revise text to read as follows:
Cylinder protection from mechanical shock shall comply with 5.3.13.1.3.
Substantiation: The requirement for protection of cylinders is to be retained by this chapter and needs to be reinserted into this chapter and referenced here.

99- Log #296 HEA-MED
(A.9.4.2 (New)) Final Action:

Submitter: Joshua Elvove, U.S. General Services Administration
Comment on Proposal No: 99-400
Recommendation: Add the following new annex material to text to the end of the existing annex as follows:

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 11.3.2.3.

A.11.3.2 When determining the volume of storage, do not consider cylinders and containers that are in use. There is no limit on the amount of nonflammable gas cylinders or containers that may be stored within a smoke compartment provided nonflammable gas cylinders and containers in excess of 300 ft3 are stored in an enclosure that meets the requirements of 11.3.2.1 through 11.3.2.3.

Substantiation: Guidance is needed to help determine how to determine the volume of nonflammable gas storage. Without it, many compliance issues arise. The annex note is meant to ensure to exclude nonflammable gas cylinders and containers from calculated volume. It also provides clarification that there is no requirement limit the amount of nonflammable gas cylinders and containers stored within a smoke compartment provided the appropriate storage requirements are met. This is needed as some jurisdictions incorrect interpret that no more than 300 ft3 of nonflammable gas cylinders and containers may be stored in a smoke compartment (22,500 floor area) even when properly stored. For example, if 13 E-cylinders of oxygen are being stored within a smoke compartment, when considering the volume of one E-cylinder is 25 ft3, the requirement should be that one of these cylinders be stored in accordance with 11.3.2.1 through 11.3.2.3. Every additional cylinder thereafter, must also be stored similarly until such time as the aggregate in any one room exceeds 3000 ft3. At that time, the requirements of 11.3.1 will apply.
Add the following new annex material to text to the end of the existing annex as follows:

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 11.3.2.3.

A.11.3.2 When determining the volume of storage, do not consider cylinders and containers that are in use. There is no limit on the amount of nonflammable gas cylinders or containers that may be stored within a smoke compartment provided nonflammable gas cylinders and containers in excess of 300ft³ are stored in an enclosure that meets the requirements of 11.3.2.1 through 11.3.2.3.

Guidance is needed to help determine how to determine the volume of nonflammable gas storage. Without it, many compliance issues arise. The annex note is meant to ensure to exclude nonflammable gas cylinders and containers from calculated volume. It also provides clarification that there is no requirement limit the amount of nonflammable gas cylinders and containers stored within a smoke compartment provided the appropriate storage requirements are met. This is needed as some jurisdictions incorrect interpret that no more than 300ft³ of nonflammable gas cylinders and containers may be stored in a smoke compartment (22,500 floor area) even when properly stored. For example, if 13 E-cylinders of oxygen are being stored within a smoke compartment, when considering the volume of one E-cylinder is 25ft³, the requirement should be that one of these cylinders be stored in accordance with 11.3.2.1 through 11.3.2.3. Every additional cylinder thereafter, must also be stored similarly until such time as the aggregate in any one room exceeds 3000ft³. At that time, the requirements of 11.3.1 will apply.