First Revision No. 901-NFPA 99-2024 [Section No. 3.3.82]

3.3.83 Hyperbaric Facility.

Building, structure, or space used to house one or more hyperbaric chambers and auxiliary service equipment for ~~medical applications and procedures~~ hyperbaric operations at pressures above normal atmospheric pressure. (HYP)

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 09:50:24 EDT 2024

Committee Statement

Committee Statement: The revision removes “for medical applications” to expand the applicability of the requirements. Risk mitigation and fire code adherence are necessary for all hyperbaric uses, not just those limited to medical applications. The committee requests that the correlating committee incorporate the language of this revision into 1.1.12 pending the action by the TC on Fundamentals.

Response Message: FR-901-NFPA 99-2024

Public Input No. 348-NFPA 99-2024 [Section No. 3.3.82]

First Revision No. 1104-NFPA 99-2024 [New Section after 3.3.83]

3.3.85* Hyperbaric Physician-in-Charge.

The medical professional supervising hyperbaric operations at a hyperbaric facility. (HYP)

A.3.3.85 Hyperbaric Physician-in-Charge.

The term *hyperbaric physician-in-charge* indicates a supervising medical professional operating within their scope of practice, regardless of title. Examples of titles for a hyperbaric physician-in-charge include medical doctor (MD), doctor of osteopathic medicine (DO), nurse practitioner (NP), physician assistant (PA), or doctor of podiatry (DPM). (HYP)

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Mon Aug 05 15:38:30 EDT 2024

Committee Statement

Committee Statement: The revision adds a definition for the the term 'hyperbaric physician in charge', which is used in several requirements in Ch. 14. The new annex language clarified that the hyperbaric physician in charge might not necessarily be a medical doctor. The lead hyperbaric medical person at hyperbaric facilities could have the professional title of medical doctor (MD), doctor of osteopathic medicine (DO), nurse practitioner (NP), physician assistant (PA) or doctor of podiatry (DPM). The physician in charge is meant to capture the lead medical person regardless of their title.

Response Message: FR-1104-NFPA 99-2024

Public Input No. 355-NFPA 99-2024 [New Section after 3.3.156.7]

First Revision No. 902-NFPA 99-2024 [Section No. 3.3.83]

See FR-903

3.3.84 Hyperbaric Operations.

~~Procedures conducted on the patient receiving hyperbaric treatment~~ One or more procedures conducted using a hyperbaric chamber . (HYP)

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 09:56:47 EDT 2024

Committee Statement

Committee Statement: The revision changes procedures to "one or more" procedures: procedures imply multiple whereas procedure implies a single action. The definition of hyperbaric operations needs to cover risk mitigation every action; not just multiple actions. It also removes the word “human”: Risk mitigation is necessary for all hyperbaric uses, not just those limited with human involvement.

Response Message: FR-902-NFPA 99-2024

Public Input No. 347-NFPA 99-2024 [Section No. 3.3.83]

First Revision No. 904-NFPA 99-2024 [Section No. 3.3.85]

3.3.87 Hypobaric Facility.

Building, structure, or space used to house one or more hypobaric chambers and auxiliary service equipment for ~~medical applications and procedures~~ hypobaric operations at pressures below atmospheric pressure. (HYP)

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 10:44:56 EDT 2024

Committee Statement

Committee Statement: The revision removes “for medical applications”: Risk mitigation and fire code adherence are necessary for all hypobaric uses, not just those limited to medical applications.

Response Message: FR-904-NFPA 99-2024

Public Input No. 349-NFPA 99-2024 [Section No. 3.3.85]

First Revision No. 907-NFPA 99-2024 [Section No. 14.1.2.2]

14.1.2.2* Occupancy.

Hyperbaric chambers shall be classified according to the following criteria:

(1) Class A — Human, multiple occupancy

(2) Class B — Human, single occupancy

(3) Class C — Animal, ~~no~~ not intended for human occupancy

A.14.1.2.2

Class A hyperbaric chambers are commonly referred to as “multiplace chambers” and Class B hyperbaric chambers are commonly referred to as “monoplace chambers.”

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 11:46:13 EDT 2024

Committee Statement

Committee Statement: The revision clarifies that chambers intended for animal occupancy are to be classified as Class C. The proposed annex language clarifies that Class A chambers are referred to as multiplace and Class B chambers are referred to as monoplace by the industry.

Response Message: FR-907-NFPA 99-2024

Public Input No. 61-NFPA 99-2024 [Section No. 14.1.2.2]

First Revision No. 908-NFPA 99-2024 [Section No. 14.1.3.4]

~~**14.1.3.4** Category 4 Hyperbaric Care. (Reserved)~~

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 12:20:40 EDT 2024

Committee Statement

Committee Statement: The committee action deletes category 4 in NFPA 99 chapter 14. There is no reason to have a Category 4 in Chapter 14, because there is always some risk in a hyperbaric operation.

"…A pressure differential of only 80 mm Hg (alveolar air) above ambient water pressure on the chest wall, or about 3 to 4 feet of depth under water, is adequate to force air bubbles across the alveolar-capillary membrane. PBT has occurred from breath-holding during ascent from a depth as shallow as 4 feet of water…" [Excerpt from the Neuman and Thom book: Physiology and Medicine of Hyperbaric Oxygen Therapy. Chapter 13 - Gas Embolism: Venous and Arterial Gas Embolism.]

A fatality was reported from a rapid pressure reduction of 4 fsw (3 psi).

NFPA 99 chapter 14 requires that chambers be designed and fabricated to ASME-PVHO-1. ASME-PVHO-1 applies to all pressure vessels for human occupancy with a pressure differential of 2 psi or more (because of the physiological risk of pressure changes greater than 2 psi). The submitter cited a need for a lower threshold of applicability for Chapter 14. The current threshold of applicability in Chapter 14 (0 – 100 psi) is appropriate.

The submitter described "low-risk" chambers. However, there has been at least one death reported inside one of the chambers intended to fall under the proposed new Category 4.

Response Message: FR-908-NFPA 99-2024

Public Input No. 81-NFPA 99-2024 [Section No. 14.1.3.4]

Public Input No. 31-NFPA 99-2024 [Section No. 14.1.3.4]

Public Input No. 47-NFPA 99-2024 [Section No. 14.1.3.4]

First Revision No. 909-NFPA 99-2024 [Section No. 14.1.4]

~~**14.1.4** Applicable Code.~~

~~Hyperbaric facilities that are conducting any form of treatment and are not located in a designated health care facility, including residential occupancies, shall comply with the requirements of the applicable code.~~

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 12:35:18 EDT 2024

Committee Statement

Committee Statement: The paragraph is no longer needed since other revisions clarify that Ch. 14 is intended to apply to hyperbaric facilities in all occupancies, not only health care facilities, consistent with requirements of NFPA 101. The paragraph also contained a circular reference to the 'applicable code' which in turn refers back to NFPA 99.

Response Message: FR-909-NFPA 99-2024

Public Input No. 351-NFPA 99-2024 [Section No. 14.1.4]

First Revision No. 910-NFPA 99-2024 [Section No. 14.2.1.2.2]

14.2.1.2.2*

The room housing a Class A, Class B, or Class C chamber shall contain a minimum of one ~~2-A:10B:C~~ portable fire extinguisher to address the most likely fire hazard based on the facility's hyperbaric operations .

A.14.2.1.2.2

Each hyperbaric facility should conduct a documented risk assessment to determine the appropriate number and type of portable extinguishers to have in the hyperbaric chamber room. More than one portable extinguisher and different types of portable extinguishers might be appropriate. NFPA 10 should be consulted for additional guidance.

A portable fire extinguisher might be used on a fire outside a hyperbaric chamber or on a fire inside a hyperbaric chamber that reignites after the door is opened. If discharged inside of a hyperbaric chamber, a water-filled extinguisher would have less of a negative impact on chamber occupants than an ABC or CO_2 extinguisher. If an ABC-type extinguisher is used, then a minimum of 2A:10B:C should be selected. The chemicals in an ABC extinguisher might permanently damage the acrylic windows of a Class A or Class B hyperbaric chamber.

When conducting a risk assessment, the following should be considered:

(1) Nature of the combustibles or flammables that could be ignited

(2) Potential severity (i.e., size, intensity, and speed of travel) of any resulting fire

(3) Effectiveness of the fire extinguisher on the combustibles or flammables

(4) Whether the extinguisher will be used inside the chamber, outside the chamber, or both

(5) Special considerations (i.e., using Class A chambers, Class B chambers, or both)

(6) Personnel available to operate the fire extinguisher and their physical abilities

(7) Suitability of the fire extinguisher for its environment

(8) Any anticipated adverse chemical reactions between the extinguishing agent and burning material, medical equipment, and humans

(9) Any health and operational safety concerns (e.g., exposure of operators during fire control efforts)

(10) Inspection, testing, and maintenance requirements for the fire extinguisher

Supplemental Information

File Name	Description	Approved
99_HYP_FR-910_14.2.1.2.2.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 12:53:34 EDT 2024

Committee Statement

Committee Statement:	Only requiring a 2-A:10B: C extinguisher may imply that this is the best type for hyperbaric applications, which is not correct for all situations. Instead, a risk analysis should be used to determine the appropriate extinguisher.
Response Message:	FR-910-NFPA 99-2024

Public Input No. 352-NFPA 99-2024 [Section No. 14.2.1.2.2]

First Revision No. 911-NFPA 99-2024 [Section No. 14.2.1.3.3]

14.2.1.3.3*

Gas supplies from cylinders and portable containers shall include particulate filters located at the inlet side of the regulators to prevent damage to the regulators and to protect downstream components in the piping system.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 14:14:13 EDT 2024

Committee Statement

Committee Statement: The revision clarifies the intent, especially in the case of single cylinders or portable containers.

Response Message: FR-911-NFPA 99-2024

Public Input No. 63-NFPA 99-2024 [Section No. 14.2.1.3.3]

First Revision No. 1217-NFPA 99-2024 [Section No. 14.2.1.6]

14.2.1.6 ~~Storage~~ Handling and ~~Handling~~ Use of Medical Gases.

~~Storage~~ Handling and ~~handling~~ use of medical gases shall meet the applicable requirements of Chapter 5 and Chapter 11.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Fri Aug 09 15:47:59 EDT 2024

Committee Statement

Committee Statement: NFPA 99 and NFPA 55 are in conflict with regard to the storage of medical gases in health care facilities. A joint task group is being established to harmonize the two documents.

Response Message: FR-1217-NFPA 99-2024

First Revision No. 912-NFPA 99-2024 [Section No. 14.2.2.1.1]

14.2.2.1.1*

The ~~primary~~ pressure relief device on a chamber shall be capable of preventing any increase in pressure above the design pressure.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 14:21:13 EDT 2024

Committee Statement

Committee Statement: Chambers are required to be fabricated to ASME PVHO-1. There is no requirement in ASME PVHO-1 for a secondary means of pressure relief, therefore the word 'primary' is not necessary.

Response Message: FR-912-NFPA 99-2024

Public Input No. 58-NFPA 99-2024 [Section No. 14.2.2.1.1]

First Revision No. 913-NFPA 99-2024 [Section No. 14.2.2.2]

14.2.2.2

The chamber shall be ~~stamped~~ marked in accordance with ASME PVHO-1, *Safety Standard for Pressure Vessels for Human Occupancy*.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 14:44:39 EDT 2024

Committee Statement

Committee Statement: ASME PVHO-1 does not refer to stamping. Stamping is only required under ASME VIII (div. 1 and div. 2) on the pressure vessel name plate. Instead ASME PVHO-1 requires specific marking on a separate nameplate dedicated to PVHO-1 information.

Response Message: FR-913-NFPA 99-2024

Public Input No. 187-NFPA 99-2024 [Section No. 14.2.2.2]

First Revision No. 1105-NFPA 99-2024 [Section No. 14.2.2.6.1]

14.2.2.6.1*

~~Interior paint/coating shall meet the performance criteria of NFPA *101* , Class A interior finish, when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials* , or UL 723, *Test for Surface Burning Characteristics of Building Materials* .~~ The designer shall select a coating product that provides corrosion and abrasion resistance adequate for the intended location and application and that complies with all of the following:

(1) The coated surfaces shall remain bubble-free during all hyperbaric excursions.

(2) Coating products shall be safe for human contact after the manufacturer's specified curing time.

(3) No volatile compounds shall be released after the coating has cured.

(4) The total dry film thickness (DFT) for the original coated surfaces shall not exceed 1/28 in. (0.9 mm).

A.14.2.2.6.1

~~In past editions of this code, "high quality epoxy" was specified as interior finish in these chambers, without a specific fire performance. Although not the only option, this type of material offers suitable physical properties. The interior finish of a Class A chamber should be smooth, impermeable, durable, provide corrosion resistance, and be compatible with infection control procedures.~~ Marine grade epoxy coatings have proven to be suitable products for hyperbaric applications. An epoxy zinc-based product for the undercoat and either an epoxy or polyurethane product for intermediate and/or top coats, where correctly applied, provide suitable corrosion and abrasion resistance.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Mon Aug 05 16:14:30 EDT 2024

Committee Statement

Committee Statement: NFPA 101 Chapter 10 requirements are primarily intended for building surfaces - walls and ceilings in the main.

While there is one reference to metal ceilings and wall panels (10.2.4.12: NFPA 101 2024), none of the rest of the section is representative of the substrates in hyperbaric chamber shells. Using flame spread and smoke developed indices are relevant (hence NFPA 101 Class A), but none of the rest really applies.

The chamber designer is the one determining what is suitable, based on location, installation and application. They should determine suitable products to be used.

The most important criteria for a chamber internal paint system include:

(1) The coating must remain bubble-free during use (meaning no porosity or pin holes).

(2) The product must be human safe once in use.

(3) There must be no accelerant given off after curing is complete.

(4) Excessive coating thickness during initial application can mask flaws. However, after this, common practices of local touch-up (for minor nicks and scratches) or repairs (removal of corroded surfaces) are usually coated over the initial paint surface. Maintaining a strict 0.9mm DFT is difficult to achieve and difficult to measure.

Response Message: FR-1105-NFPA 99-2024

Public Input No. 188-NFPA 99-2024 [Section No. 14.2.2.6.1]

First Revision No. 915-NFPA 99-2024 [Section No. 14.2.2.6.2]

~~14.2.2.6.2*~~

~~One additional application of paint shall be permitted, provided total paint thickness does not exceed 4/28 in. (0.9 mm).~~

~~A.14.2.2.6.2~~

~~One common hazard of paint fires in ships is related to welding or burning operations on one side of a metal bulkhead that heats the metal to a point where the paint on the opposite side ignites. Most paints are not flammable when installed as thin layers over a substantial heat sink, such as the thick steel walls of a hyperbaric chamber, unless the walls are heated first. The same paints, when ground into a powder or installed over a very thin metal substrate, can burn readily. The paint selected for use in the interior walls of a hyperbaric chamber should be selected both for suitability to the requirements of the application and for its combustibility properties. The hazard of a fire increases as the amount of heat sink is reduced. Therefore, combustion is easier to achieve when paint is applied over thin materials and when there are multiple layers of paint. On thin section materials that are easily heated, care should be exercised in selecting the flammability characteristics of the paint and the amount of paint applied.~~

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 15:05:32 EDT 2024

Committee Statement

Committee Statement: Guidance on recoating/repainting is being provided in the maintenance section (see action PI-196).

Response Message: FR-915-NFPA 99-2024

Public Input No. 38-NFPA 99-2024 [Section No. 14.2.2.6.2]

Public Input No. 191-NFPA 99-2024 [Section No. 14.2.2.6.2]

First Revision No. 987-NFPA 99-2024 [Section No. 14.2.3.1]

14.2.3.1

Sources of illumination mounted outside the pressure chamber and arranged to shine through ~~chamber ports or through chamber penetrators designed for fiber-optic or similar lighting~~ a viewport or a light pipe shall meet the following requirements:

(1) ~~Lighting~~ The design temperature of external lighting fixtures used in conjunction with ~~viewports shall be designed so that temperature ratings for the viewport material given in~~ acrylic materials shall not exceed the design temperature rating of the acrylic material, in accordance with ASME PVHO-1, *Safety Standard for Pressure Vessels for Human Occupancy*~~, are not exceeded~~ .

(2) Gasket ~~material shall be of a type that allows the movement of thermal expansion and shall be selected for the temperatures, pressures, and composition of gases involved.~~ materials shall comply with the following:

(a) The gasket material ~~shall be of a~~ type ~~that allows~~ shall allow the movement of thermal expansion.

(b) The gasket material shall be selected for the temperatures, pressures, and composition of gases involved.

(3) Gaskets or O-rings shall be confined to grooves or enclosures~~, which will~~ that prevent ~~their~~ them from being blown out or squeezed from the ~~enclosures~~ enclosure or compression ~~flanges~~ flange .

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 18:12:31 EDT 2024

Committee Statement

Committee Statement: (1) Chamber ports means viewports if these are intended for viewing or transmission of lighting.

(2) Lighting is transmitted from outside to inside.

(3) It is not the viewport temperature that is sensitive to overheating by the acrylic window (insert).

(4) The acrylic window temperature can be the maximum of a range of temperatures. Temperature is a design criteria, used to select the conversion factor in the determination of the short term critical pressure. The maximum temperature is thus selected by the designer in accordance with the range provided for in ASME PVHO-1, i.e., 50°F to 150°F.

Response Message: FR-987-NFPA 99-2024

Public Input No. 202-NFPA 99-2024 [Section No. 14.2.3]

Public Input No. 229-NFPA 99-2024 [New Section after 14.2.3.1]

First Revision No. 918-NFPA 99-2024 [Section No. 14.2.4.3.4]

~~**14.2.4.3.4**~~

~~Noncombustible packing and nonflammable lubricant shall be employed on the fan shaft.~~

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 16:09:51 EDT 2024

Committee Statement

Committee Statement: This requirement is from the past when the environmental conditioning unit was mounted on the outside and the fan shaft penetrated the pressure boundary.

This is adequately covered in 14.3.2.3, which states, "The following shall be compatible with oxygen under service conditions..... (2) gaskets and ..... (4) lubricants."

Response Message: FR-918-NFPA 99-2024

Public Input No. 204-NFPA 99-2024 [Section No. 14.2.4.3.4]

First Revision No. 984-NFPA 99-2024 [Section No. 14.2.6.2.10]

14.2.6.2.10*

Water storage vessels ~~capable of producing or containing corrosion or other products capable of blocking outlet nozzles shall be equipped with a strainer complying with 14.2.6.2.10.1 through 14.2.6.2.10.3 .~~ shall comply with at least one of the following:

(1) They shall be constructed of materials that are not corroded by potable water, even when stored for extended lengths of time.

(2) The interior surfaces shall be painted or lined to protect against corrosion.

(3) If the tank is constructed of ferrous metal, it shall be equipped with a sacrificial anode that has electrical continuity to the vessel interior material.

~~**14.2.6.2.10.1**~~

~~The strainer shall be located where water exits the vessel into the fire suppression system piping.~~

14.2.6.2.10.1

The strainer shall be capable of opening for inspection and cleaning of the filter device during periodic system maintenance inspections.

14.2.6.2.10.2

The strainer mesh or pore size shall be selected to protect deluge nozzles and any inline flow control equipment from blockage or damage and to ensure the filter does not clog between fire suppression system testing intervals specified in ~~14.3.4.3.5~~ 14.3.4.3.4 .

14.2.6.2.11*

Dielectric unions shall be employed to electrically isolate water storage vessels constructed of metal from dissimilar metals.

A.14.2.6.2.11

Dielectric unions are not necessary on gauges, relief valves, or other piping that does not come in contact with any other metal or conductive structure. Measures should be taken to electrically isolate the storage tank from the earth or dissimilar metals where it is anchored.

14.2.6.2.12

Water storage vessels shall be equipped with a strainer on the incoming water feed.

Supplemental Information

File Name	Description	Approved
99_HYP_FR-984_14.2.6.2.10.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 17:31:42 EDT 2024

Committee Statement

Committee Statement:	The revision incorporates the actions suggested in PI-89 and reformats them for compliance with the Manual of Style.
Response Message:	FR-984-NFPA 99-2024

Public Input No. 89-NFPA 99-2024 [Section No. 14.2.6.2.10 [Excluding any Sub-Sections]]

First Revision No. 920-NFPA 99-2024 [Section No. 14.2.6.3.1]

14.2.6.3.1

At least two handlines shall be ~~strategically~~ located in treatment compartments (locks) to enable their accessibility and wetting of all surfaces .

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 16:23:00 EDT 2024

Committee Statement

Committee Statement: The term strategically is not enforceable. The intention is to be able to provide complete and rapid water delivery to all surfaces of the chamber where a fire might be.

Handlines are to be available for use by an occupant.

Response Message: FR-920-NFPA 99-2024

Public Input No. 206-NFPA 99-2024 [Section No. 14.2.6.3.1]

First Revision No. 921-NFPA 99-2024 [Section No. 14.2.6.5.1]

14.2.6.5.1

At least two portable fire extinguishers shall be ~~strategically~~ located in treatment compartments (locks) to enable accessibility of fire extinguishers and fire extinguishing agent coverage of all surfaces .

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 16:32:53 EDT 2024

Committee Statement

Committee Statement: The term strategically is not enforceable. The word (locks) is added to be consistent with 14.2.6.3.1. The intention is for any occupant to be able to reach and suppress a fire on any surface.

Response Message: FR-921-NFPA 99-2024

Public Input No. 207-NFPA 99-2024 [Section No. 14.2.6.5.1]

First Revision No. 922-NFPA 99-2024 [Section No. 14.2.9.3.6.1]

14.2.9.3.6.1

Fixed wiring shall be installed behind paneling or otherwise protected from damage. ~~in conduit using the following components and be watertight after installation:~~

- ~~Threaded metal joints~~
- ~~Fittings~~
- ~~Boxes~~
- ~~Enclosures~~

14.2.9.3.6.2

Any joints or connections for fixed wiring shall be watertight after installation.

Supplemental Information

File Name	Description	Approved
99_HYP_FR-922_14.2.9.3.6.1.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 16:37:19 EDT 2024

Committee Statement

Committee Statement: This change will allow modern wiring methods and different materials to be used while still allowing for metal conduit.

Response Message: FR-922-NFPA 99-2024

Public Input No. 36-NFPA 99-2024 [Section No. 14.2.9.3.6.1]

First Revision No. 923-NFPA 99-2024 [Section No. 14.2.9.3.14.2]

14.2.9.3.14.2

Permanently installed ~~fixtures~~ luminaires shall meet the following requirements:

(1) They shall ~~be rated and approved for Class I (Division 1 or 2) classified areas~~ comply with the temperature rating specified in 14.2.9.3.11 .

(2) They shall have lens guards installed.

(3) They shall be located away from areas where they would experience physical damage from the normal movement of people and equipment.

Supplemental Information

File Name	Description	Approved
99_HYP_FR-923_14.2.9.3.14.2.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 16:45:34 EDT 2024

Committee Statement

Committee Statement: Class 1 Div 1 does not apply in Class A chambers.

Response Message: FR-923-NFPA 99-2024

Public Input No. 64-NFPA 99-2024 [Section No. 14.2.9.3.14.2]

First Revision No. 966-NFPA 99-2024 [Section No. 14.2.9.3.14.4]

14.2.9.3.14.4

Portable ~~fixtures~~ luminaires intended for spot illumination shall be shatterproof or protected from physical damage.

Submitter Information Verification

Committee: HEA-HYP
Submittal Date: Wed Jul 31 12:11:47 EDT 2024

Committee Statement

Committee Statement: The revision is intended for consistency with NFPA 70 terminology.
Response Message: FR-966-NFPA 99-2024

First Revision No. 924-NFPA 99-2024 [Section No. 14.2.9.3.16.5]

14.2.9.3.16.5

The equipment shall be fitted with an on-off switch.

14.2.9.3.16.6

The power plug of a cord-connected device shall not be used to interrupt power to the device.

14.2.9.3.16.7 Cord-Connected Devices.

~~Cord-connected devices shall meet the following requirements:~~

~~All portable, cord-connected equipment shall have an on/off power switch.~~

~~The equipment electrical rating shall not exceed 120 V and 2 A, unless the electrical portions of the equipment are inert-gas purged.~~

~~The plug of cord-connected devices shall not be used to interrupt power to the device.~~

(A)

Cord-connected devices other than those complying with 14.2.9.3.16.7(B) shall not exceed the following:

(1) 120 volts ac and 2 A or 240 volts ac and 1 A

(2) 240 W

(B)

Cord-connected devices shall not be required to comply with 14.2.9.3.16.7(A) where all of the following are met:

(1) The electrical portions of the equipment are inert-gas purged.

(2) Electrical connections and switches are water-resistant and rated to at least NEMA rating IP65 to be able to withstand possible fire deluge system activation.

(3) Power supplied to the device is ungrounded.

(4) Current overload protection is provided with due consideration of start-up loading.

(5) Line isolation monitoring of the power supply is provided with the following:

(a) A 5 mA trigger with an audible alarm

(b) Continuous hazard current monitoring with visual indications for normal and fault conditions

Supplemental Information

File Name	Description	Approved
99_HYP_FR-924_14.2.9.3.16.5.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 16:50:28 EDT 2024

Committee Statement

Committee Statement: 120 V is a US-centric value. 220 - 240 V is used elsewhere. 120 V and 2 amps implies a power rating of 240 watts. The equivalent would be 240 V and 1 amp.

High voltage power supplies not only elevate sparking potential and temperature, they also introduce an electrocution hazard to chamber occupants.

Response Message: FR-924-NFPA 99-2024

Public Input No. 210-NFPA 99-2024 [Section No. 14.2.9.3.16.5]

First Revision No. 925-NFPA 99-2024 [Section No. 14.2.9.6.4]

14.2.9.6.4

Equipment not specified by 14.2.9.6 shall be permitted in the chamber, with the approval of the hyperbaric ~~medical director~~ physician in charge and the hyperbaric safety coordinator, if any of the following conditions exists:

(1) The equipment is intrinsically safe.

(2) The equipment is compliant with Class 1 requirements specified in Article 500 of *NFPA 70*.

(3) The equipment meets all of the following conditions:

(a) The batteries and circuitry are sealed or isolated from the chamber environment.

(b) The equipment has a maximum voltage of 3 volts and a maximum power requirement of 4 W.

(c) The equipment contains no volatile lubricants or hydrocarbons.

Supplemental Information

File Name	Description	Approved
99_HYP_FR-925_14.2.9.6.4.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 17:03:58 EDT 2024

Committee Statement

Committee Statement: "Physician in charge" is used throughout the code to represent the lead medical person. The addition of "maximum" clarifies the requirement.

Response Message: FR-925-NFPA 99-2024

Public Input No. 353-NFPA 99-2024 [Section No. 14.2.9.6.4]

First Revision No. 926-NFPA 99-2024 [Section No. 14.2.11.2 [Excluding any Sub-Sections]]

Exhaust from all classes of chambers shall be ~~piped~~ designed to vent outside of the building.

Submitter Information Verification

Committee: HEA-HYP
Submittal Date: Tue Jul 30 17:21:30 EDT 2024

Committee Statement

Committee Statement: This change will allow for exhaust ductwork instead of restricting the exhaust to piping.
Response Message: FR-926-NFPA 99-2024

Public Input No. 66-NFPA 99-2024 [Section No. 14.2.11.2 [Excluding any Sub-Sections]]

First Revision No. 960-NFPA 99-2024 [Section No. 14.2.11.2.4]

14.2.11.2.4

The point of exhaust shall be protected ~~by~~ against the ~~provision of a minimum of 0.3 cm (0.12 in.) mesh screen and situated to prevent the intrusion of rain, snow, or airborne debris~~ entry of vermin, insects, debris, and precipitation in accordance with 14.2.11.2.4.1 through 14.2.11.2.4.4 .

14.2.11.2.4.1

Class B and Class C chambers shall use piping that is protected by a screen with mesh no larger than 3.2 mm (0.125 in.).

14.2.11.2.4.2

Class A chambers shall use piping in accordance with 14.2.11.2.4.1 or ductwork that is either screened in accordance with 14.2.11.2.4.1 or protected by automatic-closing louvers.

14.2.11.2.4.3

Screening and louvers shall be fabricated or composed of a noncorroding material.

14.2.11.2.4.4

Oxygen exhaust and associated signage shall be inspected and documented at scheduled intervals to ensure presence and function.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 11:07:36 EDT 2024

Committee Statement

Committee Statement: The revision aligns this requirement with requirements in NFPA 99 Chapter 5 (5.1.3.7.7.1 & 5.1.3.7.7.3).

Response Message: FR-960-NFPA 99-2024

Public Input No. 67-NFPA 99-2024 [Section No. 14.2.11.2.4]

First Revision No. 927-NFPA 99-2024 [Section No. 14.3.1.3.2.1]

14.3.1.3.2.1

The hyperbaric safety coordinator shall develop operation and maintenance procedures for the hyperbaric facility with ~~facility management personnel and the hyperbaric physician(s).~~ input from the following:

(1) Facility management personnel

(2) Hyperbaric medical director

(3) ASME PVHO-2, *Safety Standard for Pressure Vessels for Human Occupancy in-Service Guidelines*

(4) Equipment manufacturer's instructions for use

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 17:35:34 EDT 2024

Committee Statement

Committee Statement: NFPA 99 cites ASME PVHO-1 in fabrication and does not recognize ASME PVHO-2 in the maintenance section. ASME PVHO-2 is a standard that defines the post-construction maintenance of a chamber fabricated to PVHO-1. The revision acknowledges the chamber manufacturer's recommendations for its maintenance and operation.

Response Message: FR-927-NFPA 99-2024

Public Input No. 74-NFPA 99-2024 [Section No. 14.3.1.3.2.1]

First Revision No. 906-NFPA 99-2024 [Section No. 14.3.1.4.2]

14.3.1.4.2

The hyperbaric physician-in-charge ~~of hyperbaric medicine~~ and the hyperbaric safety coordinator shall jointly develop the minimum staff qualifications, experience, and complement based on the following:

(1) Number and type of hyperbaric chambers in use

(2) Maximum treatment capacity

(3) Type of hyperbaric therapy normally provided

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 11:22:38 EDT 2024

Committee Statement

Committee Statement: The revision is needed for consistency with the new definition of 'hyperbaric physician in charge'.

Response Message: FR-906-NFPA 99-2024

First Revision No. 928-NFPA 99-2024 [Section No. 14.3.1.4.6]

14.3.1.4.6*

During chamber operations with ~~an occupant(s)~~ one or more occupants in a chamber, ~~the operator shall be physically present and shall maintain visual or audible contact with the control panel or the chamber occupant(s).~~ the following shall apply:

(1) The operator shall be physically present.

(2) The operator shall maintain visual or audible contact with the control panel or the chamber occupant(s).

14.3.1.4.7

Class A chambers shall have one or more qualified persons as inside attendants.

14.3.1.4.8

The ratio of attendants to occupants shall be determined by the hyperbaric physician-in-charge and the hyperbaric safety coordinator.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 17:49:09 EDT 2024

Committee Statement

Committee Statement: Using the UHMS Staffing guidelines and USN / USAF chamber operations manuals, it is common practice in the USA is to have a qualified inside attendant during chamber operations. In the clinical setting we are not allowed to lower the standard of care. The code has no language that requires an inside attendant during multiplace (class A) chamber operations. The presence of a trained Qualified Person in the occupied chamber to act in the case of an emergency is vital and should be included in the code.

Response Message: FR-928-NFPA 99-2024

Public Input No. 71-NFPA 99-2024 [Section No. 14.3.1.4.6]

First Revision No. 930-NFPA 99-2024 [Section No. 14.3.1.5.4 [Excluding any Sub-Sections]]

Emergency ~~procedures and fire training~~ drills shall be conducted at least annually ~~and documented by the hyperbaric safety coordinator.~~ on the following types of incidents:

(1) Fire inside or outside the hyperbaric chamber

(2) Mechanical failures

(3) Physiological emergencies

Supplemental Information

File Name	Description	Approved
99_HYP_FR-930_14.3.1..5.4.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 17:53:19 EDT 2024

Committee Statement

Committee Statement: This change stresses the importance of drilling for physiological and mechanical emergencies, in addition to fire.

Response Message: FR-930-NFPA 99-2024

Public Input No. 357-NFPA 99-2024 [Section No. 14.3.1.5.4 [Excluding any Sub-Sections]]

Public Input No. 180-NFPA 99-2024 [Section No. 14.3.1.5.4 [Excluding any Sub-Sections]]

First Revision No. 931-NFPA 99-2024 [New Section after 14.3.1.5.4.2]

14.3.1.5.4.3

Drills shall be documented by the hyperbaric safety coordinator.

Submitter Information Verification

Committee: HEA-HYP
Submittal Date: Tue Jul 30 18:08:46 EDT 2024

Committee Statement

Committee Statement: Evidence of compliance with drill requirements is required.
Response Message: FR-931-NFPA 99-2024

First Revision No. 968-NFPA 99-2024 [Section No. 14.3.1.6.4.1]

14.3.1.6.4.1

Except ~~where~~ as permitted in 14.3.1.6.4.2 and 14.3.1.6.4.3, silk, wool, or synthetic textile materials, or any combination thereof, shall be prohibited in Class A or Class B chambers.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 12:19:37 EDT 2024

Committee Statement

Committee Statement: Paragraph 14.3.1.6.4.2 specifically allows a blend of cotton and polyester fabric, which contradicts 14.3.1.6.4.1 because polyester is a synthetic textile. The change removes the contradiction in requirements without altering the intent of either one.

Response Message: FR-968-NFPA 99-2024

First Revision No. 933-NFPA 99-2024 [Section No. 14.3.1.6.8]

14.3.1.6.8*

Clothing worn by patients in Class A or Class B chambers and by personnel in Class A chambers shall, prior to each treatment, ~~conform to~~ comply with the following:

(1) They shall be issued by the hyperbaric facility or specifically approved by the hyperbaric safety coordinator for hyperbaric use.

(2) They shall be uncontaminated.

(3) They shall be devoid of prohibited articles prior to chamber pressurization.

A.14.3.1.6.8

The controls placed on clothing allowed in the hyperbaric chamber reduce the risk of ignition sources being taken into the chamber. Risk can be further reduced by providing clothing without pockets or by sealing any pockets that are present.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 18:19:47 EDT 2024

Committee Statement

Committee Statement: Pockets are a potential source of hiding prohibited items. The removal of pockets in all cases might be impracticable.

Response Message: FR-933-NFPA 99-2024

Public Input No. 356-NFPA 99-2024 [Section No. 14.3.1.6.8]

First Revision No. 934-NFPA 99-2024 [Section No. 14.3.2.1.2]

14.3.2.1.2

The following devices shall not be operated in the hyperbaric chamber unless approved for such use by the hyperbaric safety coordinator and ~~medical director of hyperbaric medicine~~ the hyperbaric physician-in-charge :

(1) Portable x-ray devices

(2) Electrocautery equipment

(3) High-energy devices

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 18:22:36 EDT 2024

Committee Statement

Committee Statement: "Hyperbaric physician in charge" is used throughout the code to represent the lead medical person.

Response Message: FR-934-NFPA 99-2024

Public Input No. 354-NFPA 99-2024 [Section No. 14.3.2.1.2]

First Revision No. 919-NFPA 99-2024 [Section No. 14.3.2.3]

14.3.2.3

The following shall be compatible with oxygen under service conditions:

(1) Valve seats
(2) Gaskets
(3) Hoses
(4) Lubricants
(5) Shaft packings

Submitter Information Verification

Committee: HEA-HYP
Submittal Date: Tue Jul 30 16:15:13 EDT 2024

Committee Statement

Committee Statement: The revision changes 'hose' to 'hoses' (plural) and adds the term 'packing' to coordinate with the removal of 14.2.4.3.4.

Response Message: FR-919-NFPA 99-2024

Public Input No. 205-NFPA 99-2024 [Section No. 14.3.2.3]

First Revision No. 935-NFPA 99-2024 [Section No. 14.3.2.6]

~~14.3.2.6*~~

~~In the event that radiation equipment is introduced into a hyperbaric chamber, hydrocarbon detectors shall be installed.~~

~~A.14.3.2.6~~

~~Radiation equipment, whether infrared or roentgen ray, can make hyperbaric chambers even more hazardous.~~

~~14.3.2.6.1~~

~~In the event that flammable gases are detected in excess of 1000 ppm, radiation equipment shall not be operated until the chamber atmosphere is cleared.~~

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 18:26:30 EDT 2024

Committee Statement

Committee Statement: This requirement is from the past when external beam ionizing radiation was used to treat applicable patients. It does not take into account new devices such as brachytherapy, where such patients are being treated. Flammable gases and liquids are excluded except as detailed in 14.3.1.6.2.

Response Message: FR-935-NFPA 99-2024

Public Input No. 209-NFPA 99-2024 [Section No. 14.3.2.6]

First Revision No. 936-NFPA 99-2024 [Section No. 14.3.4.1.1]

14.3.4.1.1

The hyperbaric safety coordinator shall ensure that all valves, regulators, meters, and similar equipment used in the hyperbaric chamber are compensated for use under hyperbaric conditions and tested as part of the facility's routine maintenance program ~~of the facility~~ .

14.3.4.1.1.1

Pressure relief valves shall be tested and calibrated as part of the facility's routine maintenance program ~~of the facility~~ .

14.3.4.1.1.2

Where employed, a rupture disc shall be inspected periodically and replaced at intervals specified by the ~~chamber~~ disc manufacturer.

Supplemental Information

File Name	Description	Approved
99_HYP_FR-936_14.3.4.1.1.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 18:28:01 EDT 2024

Committee Statement

Committee Statement: The manufacturer's instructions for the burst disc should be used for maintenance and not the chamber manufacturer. EG HP cylinders have burst discs that should be inspected and these are typically not in the chamber manufacturers scope.

Response Message: FR-936-NFPA 99-2024

Public Input No. 73-NFPA 99-2024 [Section No. 14.3.4.1.1]

First Revision No. 965-NFPA 99-2024 [Section No. 14.3.4.1.3]

14.3.4.1.3

The requirements ~~set forth in~~ of Section 5.1 and ~~NFPA 55~~ Chapter 11 ~~concerning~~ on the storage, location, and special precautions required for medical gases shall be followed.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 12:08:14 EDT 2024

Committee Statement

Committee Statement: The storage requirements of NFPA 99 Chapter 11, Gas Equipment, cover the storage, use, and handling of medical gases.

Response Message: FR-965-NFPA 99-2024

Public Input No. 125-NFPA 99-2024 [Section No. 14.3.4.1.3]

First Revision No. 952-NFPA 99-2024 [Section No. 14.3.4.2]

14.3.4.2 Maintenance Logs.

14.3.4.2.1

Installation, repairs, and modifications of equipment related to a chamber shall be evaluated ~~by engineering personnel, tested under pressure,~~ and approved by the hyperbaric safety coordinator.

14.3.4.2.2

Logs of all tests shall be maintained by the hyperbaric safety coordinator .

~~**14.3.4.2.2**~~

~~Operating equipment logs shall be maintained by engineering personnel.~~

~~**14.3.4.2.2.1**~~

~~Operating equipment logs shall be signed before chamber operation by the person in charge. *(See A.14.3.1.3.2 .)*~~

~~**14.3.4.2.3**~~

~~Operating equipment logs shall not be taken inside the chamber.~~

Supplemental Information

File Name	Description	Approved
99_HYP_FR-952_14.3.4.2.docx		

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 09:04:18 EDT 2024

Committee Statement

Committee Statement: This change brings the code in line with the UHMS survey probes HBOM 2.1 and HBO 2.2. Removing the word engineer and adding safety coordinator helps clarifies the intent. Testing under pressure would not be relevant to all maintenance activities. The requirements for operating logs are not directly related to maintenance and are already required by ASME PVHO-2.

I believe that it the hyperbaric safety coordinators responsible to maintain these logs.

Response Message: FR-952-NFPA 99-2024

Public Input No. 121-NFPA 99-2024 [Section No. 14.3.4.2]

First Revision No. 967-NFPA 99-2024 [Section No. 14.3.4.3.1]

14.3.4.3.1

Electrical switches, valves, and electrical monitoring equipment associated with fire protection shall be visually inspected before ~~each chamber pressurization~~ commencing hyperbaric operations for that day .

14.3.4.3.1.1

Where provided, water level indicators shall be visually inspected before ~~each chamber pressurization~~ commencing hyperbaric operations for that day .

14.3.4.3.1.2

Where provided, air pressure gauges shall be visually inspected before ~~each chamber pressurization~~ commencing hyperbaric operations for that day .

Supplemental Information

File Name	Description	Approved
99_14-3-4-3_Rewrite_CLEAN.docx	Resulting text from FRs on 14.3.4.3 CLEAN-for reference only	

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 12:14:07 EDT 2024

Committee Statement

Committee Statement: The change brings the code in line with typical Class A chamber operating practices.

Response Message: FR-967-NFPA 99-2024

First Revision No. 974-NFPA 99-2024 [Section No. 14.3.4.3.3]

14.3.4.3.4.1

Full testing, including discharge of extinguishing media, shall be conducted annually.

Supplemental Information

File Name	Description	Approved
99_14-3-4-3_Rewrite_CLEAN.docx	Resulting text from FRs on 14.3.4.3 CLEAN. For reference only.	

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 16:18:44 EDT 2024

Committee Statement

Committee Statement: The revision is part of a package of revisions that reformats 14.3.4.3 to provide guidance for maintenance of alternative primary fire suppression systems. See the action on PI-69 and PI-70. The revision moves the existing 14.3.4.3.3 to a new 14.3.4.3.5.1 without changes.

Response Message: FR-974-NFPA 99-2024

Public Input No. 69-NFPA 99-2024 [Section No. 14.3.4.3.3]

First Revision No. 977-NFPA 99-2024 [New Section after 14.3.4.3.5]

14.3.4.3.5

Alternative primary fire suppression systems installed in accordance with 14.2.6.4 shall be tested in accordance with the procedure and frequency as determined by the manufacturer.

Supplemental Information

File Name	Description	Approved
99_14-3-4-3_Rewrite_CLEAN.docx	Resulting text from FRs on 14.3.4.3 CLEAN-for reference only	

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 16:28:42 EDT 2024

Committee Statement

Committee Statement: The revision is part of a package of revisions that reformats 14.3.4.3 to provide guidance for maintenance of alternative primary fire suppression systems. See the action on PI-69 and PI-70.

Response Message: FR-977-NFPA 99-2024

Public Input No. 70-NFPA 99-2024 [New Section after 14.3.4.3.3]

First Revision No. 975-NFPA 99-2024 [Section No. 14.3.4.3.5 [Excluding any Sub-Sections]]

Fire ~~extinguishing systems~~ suppression systems installed in accordance with 14.2.6.2 and 14.2.6.3 shall be functionally tested at least semiannually as follows:

(1) For deluge systems, in accordance with ~~the requirements of~~ 14.2.6.2.4 and 14.2.6.2.6

(2) For handline systems, in accordance with ~~the requirements of~~ 14.2.6.3.7.1

Supplemental Information

File Name	Description	Approved
99_14-3-4-3_Rewrite_CLEAN.docx	Resulting text from FRs on 14.3.4.3 CLEAN-fo referene only	

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 16:24:54 EDT 2024

Committee Statement

Committee Statement: The revision is part of a package of revisions that reformats 14.3.4.3 to provide guidance for maintenance of alternative primary fire suppression systems. See the action on PI-69 and PI-70.

Response Message: FR-975-NFPA 99-2024

First Revision No. 981-NFPA 99-2024 [Section No. 14.3.4.3.5.4]

14.3.4.3.6

A detailed record of the test results shall be maintained and a copy sent to the hyperbaric safety coordinator.

Supplemental Information

File Name	Description	Approved
99_14-3-4-3_Rewrite_CLEAN.docx	Resulting text from FRs on 14.3.4.3 CLEAN--for reference only	

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 16:42:24 EDT 2024

Committee Statement

Committee Statement: The revision is part of a package of revisions that reformats 14.3.4.3 to provide guidance for maintenance of alternative primary fire suppression systems. See the action on PI-69 and PI-70.

Response Message: FR-981-NFPA 99-2024

First Revision No. 953-NFPA 99-2024 [Section No. 14.3.4.3.5.5]

14.3.4.3.7*

Inspection, testing, and maintenance of hyperbaric fire suppression systems shall be performed by a qualified person.

A.14.3.4.3.7

Some jurisdictions require that only a certified sprinkler system installer is to install or test a water-based fire suppression system. While hyperbaric fire suppression systems are water-based, they have design and performance criteria different from other types of fire suppression systems. A certified sprinkler system installer might not have knowledge of or experience with hyperbaric systems. The term *qualified person* clarifies that only personnel with the training and experience to work on hyperbaric fire suppression systems can complete the testing. It is recommended that the chamber manufacturer train and qualify the hyperbaric safety coordinator or other individuals responsible for the maintenance and testing of the chamber fire suppression system. Documentation of this training should be maintained. *(See 3.3.166 for the definition of qualified person.)*

Supplemental Information

File Name	Description	Approved
99_14-3-4-3_Rewrite_CLEAN.docx	Resulting text from FRs on 14.3.4.3 CLEAN--for reference only	

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Wed Jul 31 09:26:06 EDT 2024

Committee Statement

Committee Statement: There have been challenges in the industry to this line of code by some AHJs. They argue that hyperbaric technical staff are not considered a qualified person. The addition of this annex note derived from the NFPA 99 Handbook will clarify that hyperbaric technical staff who have been trained by the manufacturer to perform these tests meets the criteria of a qualified person.

The revision is part of a package of revisions that reformats 14.3.4.3 to provide guidance for maintenance of alternative primary fire suppression systems. See the action on PI-69 and PI-70.

Response Message: FR-953-NFPA 99-2024

Public Input No. 186-NFPA 99-2024 [Section No. 14.3.4.3.5.5]

First Revision No. 916-NFPA 99-2024 [New Section after 14.3.4.7]

14.3.4.8 Painting/Coating.

Where repainting or recoating of the chamber is required for maintenance, the following shall apply:

(1) Additional applications over the original finish shall be permitted.

(2) The product shall be compatible with the original paint or coating product.

(3) The coated surfaces shall remain bubble-free during all hyperbaric excursions.

(4) Coating products shall be safe for human contact after the manufacturer's specified curing time.

(5) No volatile compounds shall be released after the coating has cured.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 15:11:22 EDT 2024

Committee Statement

Committee Statement: The language in the existing code related to painting is in the requirements for fabrication. This revision locates the painting (recoating) requirements related to maintenance to the appropriate section.

Response Message: FR-916-NFPA 99-2024

Public Input No. 196-NFPA 99-2024 [New Section after 14.3.4.7]

First Revision No. 903-NFPA 99-2024 [Section No. A.3.3.83]

~~**A.3.3.83** Hyperbaric Operations.~~

~~Such procedures include but are not limited to (a) therapy inside a hyperbaric chamber, (b) changing clothes, (c) vital signs assessments, (d) noninvasive transcutaneous oxygen monitoring, (e) clinical and medical assessments, and (f) minor dressing changes. Debridement or other surgical procedures, application of casting material, application of skin substitutes, and application of bioengineered grafts are not recommended in the chamber room. (HYP)~~

Submitter Information Verification

Committee: HEA-HYP
Submittal Date: Tue Jul 30 10:24:43 EDT 2024

Committee Statement

Committee Statement: The annex note is in conflict with the revised definition in 3.3.83.
Response Message: FR-903-NFPA 99-2024

First Revision No. 954-NFPA 99-2024 [Section No. A.14.2.9.3.14]

A.14.2.9.3.14

~~It is strongly recommended that~~ Where high-intensity local task lighting is used, ~~be accomplished using through-hull fiber-optic lights. Many high-intensity lights will not meet~~ compliance with the temperature ~~requirements~~ limit specified in 14.2.9.3.11 should be ensured. Alternatively, other compliant luminaires such as through-hull fiber-optic lights or low-energy LED lights should be used .

Supplemental Information

File Name	Description	Approved
99_HYP_FR-954_A.14.2.9.3.14.docx		

Submitter Information Verification

Committee: HEA-HYP
Submittal Date: Wed Jul 31 09:43:49 EDT 2024

Committee Statement

Committee Statement: The revision allows for other permitted lighting sources.
Response Message: FR-954-NFPA 99-2024

Public Input No. 65-NFPA 99-2024 [Section No. A.14.2.9.3.14]

First Revision No. 932-NFPA 99-2024 [Section No. A.14.3.1.5.4]

A.14.3.1.5.4

A calm reaction (without panic) to an emergency situation can be expected only if the recommendations are familiar to and rehearsed by all concerned.

A suggested outline for emergency action in the case of fire is contained in B.14.2.

Other codes, such as NFPA 101 , might require a greater frequency of drills.

Submitter Information Verification

Committee: HEA-HYP

Submittal Date: Tue Jul 30 18:12:27 EDT 2024

Committee Statement

Committee Statement: The revision points the user to other codes such as NFPA 101 for other required drill frequencies.

Response Message: FR-932-NFPA 99-2024