

HEALTHCARE INTERPRETATIONS TASK FORCE
AGENDA
8 December 2006
CMS Offices
7111 Security Blvd. Room B-310
Baltimore, MD
8:30 A.M. – 4:00 P.M.

1. Call to order 8:30 AM.
2. Introduction of Members and Guests.
3. Review / Approval of June 2006 Minutes (See Enclosure A – first 5 pages only)
4. Review of Questions (See Enclosure B)
 - A. HITF: Door Task Group Report (See Enclosure B-1)
 - B. AHCA: Smoking Restrictions in Nursing Homes (See Enclosure B-2)
 - C. AHCA: Nursing Home Staff and Fire Drills (See Enclosure B-3)
 - D. CMS: Door Locking in Nurseries (See Enclosure B-4) (See also Item 5A)
5. Discussion Items:
 - A. Clinical Needs and Lockout Doors
 - B. Emergency Power Supply Sources for Type I Essential Electrical Systems (See Enclosure C)
6. New Business
 - ASHE Research on Aerosol ABHR Dispensers (See Enclosure D)
7. Old Business
 - NFPA 90A FI: Corridor as Air Plenums (See Enclosure E)
8. Date / Location for Next Meeting
9. Adjournment (by 4:00 PM)

ENCLOSURE A

MINUTES

HEALTHCARE INTERPRETATIONS TASK FORCE

6 JUNE 2006

**Orange County Convention Center
Room S210D
Orlando, FL**

1. The meeting was called to order at 1:05 PM
2. Introduction of members and guests present were completed:

Attendance included:

MEMBERS

REPRESENTING

Principals

Robert Solomon	NFPA (Chair)
Joe Bermes	IHS
Ken Bush	IFMA
Gene Cable	VA
Philip Hoge	DOD
David Klein	VA
Tom Jaeger	AHCA
George Mills	JCAHO
Dale Woodin	ASHE
Mayer Zimmerman	CMS

Alternates

Doug Erickson	ASHE
John Fishbeck	JCAHO
Greg Harrington	NFPA
Jim Merrill	CMS
Suresh Shah	IHS
Dick Strub	AHCA

GUESTS

REPRESENTING

Tim	Adams	ASHE
Chad	Beebe	Washington State Dept. of Health
Michael	Crowley	Rolf Jensen & Assoc.
David	Dagenais	Wentworth Douglass Hospital
Mike	Daniel	Daniel Consulting, LTD.
A. Richard	Fasano	Russell Phillips & Assoc.
Peter	Graham	Department of Veterans Affairs
Virgil	Hall	Department of Veterans Affairs
George	Johnston	Loma Linda University & Medical Center
Susan	McLaughlin	SBM Consultants
Richard	Nolen	HCR Manor Care Inc.
Dan	O'Connor	Schirmer Engineering Corp.
Phil	Thomas	Beverly Enterprises

3. The Minutes of the 7 June 2005 meeting were approved as submitted.
4. The agenda was approved as submitted. **See Enclosure 1.**
5. A number of issues were submitted in advance and several new items were brought up for discussion. A review of the items included the following:
 - A. **Blocking In Wall Cavities.** This item was submitted by JCAHO. The issue involves the acceptability of having an open wall cavity at the top of an assembly that is designed as part of smoke partition or wall designed to "resist the passage of smoke". A series of questions addressing requirements in both new and existing healthcare occupancies were reviewed and issued. **See HITF Interpretation JUNE 2006 NO. 1.**
 - B. **Fire Doors in Chute Terminus Rooms.** This item was submitted by JCAHO. The issue involves the need to provide rated door openings at: the chute; the room enclosure; or both locations. A series of questions relating to the philosophy and intent of how the room and chute is to be protected with rated enclosures and doors were reviewed and issued. **See HITF Interpretation JUNE 2006 NO. 2.**

- C. **Allowable Gaps Around Corridor Doors.** This item was submitted by AHCA. The issue includes allowable gaps or clearances at corridor doors other than smoke barrier doors. Clearance for certain doors is necessary to make sure the door fully opens, properly closes and remains latched. After discussing the details associated with these various clearance issues, a Task Group was appointed to study the issue and report back at the next meeting. Task Group Members are:

David Klein – VA – Chair

Tom Jaeger – AHCA

Jim Merrill – CMS

George Mills – JCAHO

- D. **Incidental Air Movement/Make Up Air.** This item was submitted by AHCA. The issue involves the intent behind a Formal Interpretation issued on NFPA 90A (FI No. 90A -02-3) for the 2002 edition. The HITF agreed not to take any formal action on this request. The committee chair and staff liaison for NFPA 90A will be contacted to insure that the 50 CFM value referenced in the FI is not considered an absolute, maximum volume rate.
- E. **Application of NFPA 101A to Certain Exterior Spaces.** This item was submitted by AHCA. The issue involves how the FSES should be scored with regard to automatic sprinkler protection when certain exterior areas such as combustible overhangs, canopies or porches are not protected with automatic sprinklers. The application of the FSES when all other areas of the building are protected with automatic sprinklers needs to be clarified. The HITF agreed not to take any formal action on this request. The committee chair and staff liaison for NFPA 101A will be contacted to see if or how the scoring issue can be clarified.
- F. **Sprinkler Protection in Closets and Cabinets.** This item was submitted by the VA. The issue involves circumstances in which sprinkler protection can be exempted from closets, wardrobes and cabinets. There are no exceptions in NFPA 13 or NFPA 101 that allow omission of sprinklers in closets in a healthcare occupancy. As noted in the background information, a distinction between built-in closets and wardrobes (or similar furnishings) has normally been the demarcation point. In the request by the VA, one question posed concerned a

closet lined with a non-combustible lining. Another question involved things like fire extinguisher cabinets and hose cabinets. The HITF took no formal action on the questions. Instead, the submitter was advised to consider submitting proposals to the TC on Automatic Sprinklers for the next edition of NFPA 13. Current closet exceptions in NFPA 13 and NFPA 101 exclusively involve residential occupancies. Addressing areas like hose or fire extinguisher cabinets may result in creation of a laundry list of building items that may or may not require sprinklers.

G. **Maintaining Previously Required Features in an Existing Building.** This item was submitted by the VA. Discussion and action on this item was deferred until the next meeting.

H. **Conduct of Fire Drills at Multiple Building Sites/Campus Configuration.** This item was submitted by the VA. The issue involves the extent and application of emergency drills in: Structures divided to meet criteria for separate buildings in accordance with the building code; or multiple, stand-alone buildings located in different locations or within a campus style environment. The HITF agreed that the emergency drills are intended to test knowledge of all employees in all buildings. A question relating to this comment was reviewed and issued. See HITF Interpretation JUNE 2006 NO. 3.

6. An Interim Report from the Door Locking Task Group (See **Enclosure 2**) was distributed. It will be discussed at the next meeting.

7. New Business:

ASHE is looking into the issue of aerosol propellant alcohol hand cleaner. Information previously distributed to the NFPA TC on Healthcare Occupancies that resulted in issuance of the TIA's and new text in NFPA 101 and NFPA 5000 was based on gel type materials. Aerosol based product is being more widely used and this form of the material needs to be reviewed to determine if other changes to NFPA 101 or NFPA 5000 are needed.

8. Old Business. The agenda item surrounding NFPA 90A was covered by Minute Item 5.D. The HITF was told that the proposal closing date for NFPA 90A was November 22, 2006.

9. Next Meeting. The HITF decided to have one more meeting before the end of 2006. The preference is to meet at/near CMS Headquarters in Baltimore, MD. Editors Note: Next meeting confirmed for December 8, 2006 at CMS Headquarters. The next meeting after that will be held in June 2007 in Boston during the 2007 NFPA WSCE.

10. The meeting adjourned at 4:10 pm.

Minutes prepared and submitted by Robert E. Solomon, PE, NFPA

ENCLOSURE B-1

Recommendations from the HITF Door Gap Task Group: (FINAL DRAFT 8/14/2006)

The following questions apply to requirements in the 2000 Life Safety Code for corridor doors other than those in required enclosures of vertical openings, exits, or hazardous areas, and other than those in smoke barriers.

Question 1: Does the Life Safety Code limit the gap between the edge of a corridor door and the door frame to 1/8-inch?

Answer: No. However, because the door stop functions as an astragal, the gap between the edge of a corridor door and the door frame shall not be greater than the depth of the door stop.

Question 2: Does the Life Safety Code limit the gap between the face of a corridor door and the door stop to 1/8-inch?

Answer: No. The Code does not specify a maximum gap dimension and specifically states that corridor doors are not required to comply with NFPA 80, Standard for Fire Doors and Fire Windows. The Code goes on to state that corridor doors should be relatively smoke tight. Due to the lack of specific dimensions for door gaps and the subjective language in the Code, the following guidance is deemed appropriate. In a smoke compartment that is not fully sprinklered, a gap not exceeding ¼-inch between the face of a corridor door and the door stop should be permitted, provided that the door latch mechanism is functioning. In a smoke compartment that is fully sprinklered, a gap not exceeding ½-inch between the face of a corridor door and the door stop should be permitted, provided that the door latch mechanism is functioning. In a smoke compartment that is not fully sprinklered, to achieve a better fit the thickness of a 1¼-inch thick corridor door should be permitted to be reduced by removing not more than ¼-inch from the face of the door. In a smoke compartment that is fully sprinklered, the Code does not impose construction requirements on a corridor door, provided that it resists the passage of smoke.

Question 3: Does the Life Safety Code limit the gap between the meeting edges of the leaves of a two-leaf corridor door to 1/8-inch?

Answer: No. The gap is permitted to exceed 1/8-inch provided that the meeting edges of the leaves are equipped with an astragal, a rabbet, or a bevel.

Additional Comment: The Task Group discussed the question of whether sliding doors are permitted to be used in corridor walls. The Task Group requests the HITF to either provide an interpretation on this question or to request the NFPA Technical Committee to provide guidance in the next edition of the Code.

ENCLOSURES B-2 & B-3

JAEGER & ASSOCIATES, LLC
11902 Holly Spring Drive
Great Falls, Virginia 22066

T (703)-433-5880
F (703)-433-5888
C (703)-674-6379
Tjaeger1@aol.com

To: Robert Solomon
From: Tom Jaeger
Ref: Request for HITF Interpretations
Date: November 23, 2006

Robert:

The following interpretation requests are:

B-2
A. **Issue:** Many nursing homes are establishing no smoking policies. This results in both staff and patients who want to smoke to smoke outside. Life safety surveyors are now requiring that the outside smoking areas comply with Sections 18 & 19.7.4 of the 2000 *Life Safety Code*. Specifically, the surveyors are requiring that the outside smoking areas be provided with noncombustible ashtrays of safe design and that metal containers with self closing covers be readily available to each outside smoking area.

Question #1: Do the requirements of Sections 18 & 19.7.4 apply to designated smoking areas outside the building?

Question # 2: If the answer to Question #1 is yes, is there a distance away from the building in which the requirements of Sections 18 & 19.7.4 would not apply?

B-3
B. **Issue:** Life safety surveyors are now requiring that every staff member of a nursing home participate in a minimum of 4 fire drills per year and provide written documentation to verify that each staff member has participated in 4 drills. Although this may sound like a simple and reasonable requirement, not all staff members are present when their shift has a drill. Staff members may be on vacation, sick, in training outside the facility, etc. It is not practical to conduct 2 to 3 drills per quarter per shift to insure that every staff member participates in 4 drills per year. The alternative is to have staff, which missed a drill on their shift, to participate in a drill on another shift. This would require paying overtime to these staff members. It is sometimes very difficult to get staff to come in during other shifts, particularly if they have second jobs or dependent children and I haven't even looked into the union issues it might create.

Question #1: Does the 2000 *Life Safety Code* require in Sections 18 & 19.7.1.2 that all staff members of a health care facility participate in 4 quarterly fire drills per year?

Question #2: If the answer to Question #1 is yes, can staff members, who miss a drill on their shift, participate in drills on other shifts?

ENCLOSURE B-4

Solomon, Robert

From: McGovern, Jill
Sent: Wednesday, November 22, 2006 12:22 PM
To: Solomon, Robert
Subject: FW: HITF Follow Up Agenda Items - Interpretations
Follow Up Flag: Follow up
Flag Status: Purple

Agenda item from Mayer Zimmerman.

B-4

From: Zimmerman, Mayer D. (CMS/CMSO) [mailto:Mayer.Zimmerman@cms.hhs.gov]
Sent: Wednesday, November 22, 2006 10:24 AM
To: McGovern, Jill
Subject: RE: HITF Follow Up Agenda Items - Interpretations

Possible agenda item:
Locking of doors for newborn nurseries. Clinical needs?
Does the code now permit this, or do we have to add to permissions already given?
How? Where?
MZ

ENCLOSURE C

RE: Genertor vs. Battery power emergency back supply and Type I Essential Electrical Systems.

Most of the existing facilities that are being accredited are existing and have been previously approved by every governmental agency for years. The generator requirement does meet the "unreasonable hardship on the facility" and the "waiver of such unmet requirement will not affect the safety of the patients" set forth by CMS. There is NO recorded data; documented or anecdotal that reveals ANY patient injury or deaths where battery systems are used in lieu of generators.

Primarily we are interested in existing facilities for the present, and that is mainly what I will address, however, I and all the electrical experts I have spoken to believe and will advocate that for the facility with only one or two OR's an approved UPS battery emergency supply may be more safe than a generator. Battery systems are on continuously. There is no delay in the supply of emergency power where UPS battery systems are used. However, NFPA 99 allows up to ten seconds for the initiation of emergency power where a generator is used. Ten seconds is a long wait for light when a patient is on the operating table.

Medical experts agree that if a patient would develop a condition during surgery in an Ambulatory Health Care Facility that would require true life support (the type provided in an acute 24 hour hospital—not intended in an ambulatory surgical center), then the medical personnel would push oxygen manually or "bag" the patient until the arrival of paramedics who would bag the patient until arrival at the nearest 24 hour acute care hospital. The patient would then be intubated and placed on true "life support" equipment. This means that if a patient needed life support, the life support would be given manually in every case. Emergency power would never be providing life support in the common use manner. Any "life support" of the patient until arrival at the hospital would be manually powered by medical staff and/or the paramedics. At that point the only useful point to emergency power would be to provide emergency lighting in the OR to prepare the patient for removal to the hospital. We believe the term "life support" refers to the 24 hour acute care type provided in hospitals.

In most existing facilities the building owner either cannot or will not allow a generator to be placed on the property. This is a non-negotiable fact of life for our facilities. Few existing buildings have a location available even if the property owner were willing to allow the placement of a generator. The problem seems to be in the use of the term "life support equipment" found in NFPA 99, 1999 Edition 3.4.2.2 and 3.4.3.1.4. We need a formal interpretation on this term and how or if it applies to ANY ASC. We know that for 4 for more patients NFPA 101, Chapters 20 and 21 apply to existing ASC's. However, NFPA 99 does not give a

number of patients for their requirements and uses Chapter 13 for "Other Health Care Facilities" which requires Type I EES in OR's, post ops, critical care areas, and other areas where in-line electrical equipment is used for patient care. BOTH NFPA 101 and NFPA 99 permit the use of batteries for this purpose.

CMS will allow Performance Based Design within its facilities as referenced in CMS Form 2786U Page 11. Therefore the case could be made that a UPS Battery Emergency Power system could be approved as a Performance Based Design. NFPA 99 requires Type I Essential Electrical Services be provided where general anesthesia or life support is used. Most UPS emergency power systems can be designed to provide Type I Essential Electrical Service if it is known to the Electrical Engineer for the facility that Type I EES is required. NFPA 99 1999 Edition includes requirements for battery systems in section 4.4.1.2 and sets forth requirements for a battery powered Type I EES.

NFPA 101 2000 Edition clearly states in sections 20.2.9.2 and 21.2.9.2

Where general anesthesia or life support equipment is used, each ambulatory health care facility shall be provided with an essential electrical system in accordance with NPFA 99, *Standard for Health Care Facilities*.

AND this code section also provides two exceptions.

Exception No. 1: Where battery-operated equipment is provided and acceptable to the authority having jurisdiction.

Exception No. 2: This requirement shall not apply to a facility uses life support equipment for emergency purposed only.

These exceptions would lead us to conclude that the code writers of NFPA 101 accepted and acknowledged that other means of supplying emergency power for these facilities do exist and can be used. However, IF CMS makes other requirements we would like to see a formal document to this effect.

As previously stated, our facilities will never use life support "equipment for emergency purposes only" as stated in exception 2. ***NO*** electrically powered life support equipment will ever be used in an Ambulatory Health Care Facility. Manual (man or woman power) will be used until the patient reaches an acute care facility. Perhaps the term "life support" can and should be clarified. Perhaps the definition, *when "mechanical ventillation" is used to provide assisted breathing during a procedure".....* should be used in place of the term "life support".

This leaves the "general anesthesia" portion of the requirement in NFPA 101 .2. which will allow approval of performance based design Type I EES systems. The case could be made that ALL battery powered UPS emergency power systems are performance based design as all systems HAVE to be engineered to meet the NFPA requirements.

CMS

Dear Sir,

It has come to my attention that there has been a lot of discussion regarding the term "critical care", the use of approved battery powered emergency electrical supply, the term "life support" as it applies to Ambulatory Surgical Centers, and when a Type I Essential Electrical System is required

NFPA 99 defines the term "critical care" as..."Those special care units, intensive care units, coronary care units, angiography laboratories, cardiac catheterization laboratories, delivery rooms, operating rooms, postanesthesia recovery rooms, emergency departments, and similar areas in which patients are intended to be subjected to invasive procedures and connected to line-operated patient-care-related electrical appliances".

NFPA does not define the term, "life support".

NFPA 99 Handbook states..."For the purpose of this standard, the use of intravenous needles or catheters used to administer fluids and/or medications, endoscopes, colonoscopes, sigmoidoscopes, and urinary catheters are not considered invasive".

- 1) NFPA 99, 1999 Edition, Chapter 3 and sections of Chapter 4 speak to the issue of emergency power. NFPA 101 Chapter 21 (existing ambulatory surgical centers) states in part..."Where general anesthesia or life support is used, an emergency power system is provided...refer to NFPA 99
- 2) Neither NFPA 101 2000 edition or NFPA 99, 1999 Edition currently define the term "life support equipment" in the definitions chapter. I am unable to find a definition of the term in NFPA 99 either, making a valid interpretation of this term difficult. Thirty years of inspection experience would allow me or any other inspector to allow the doctor, or medical expert at the facility to make the determination if his or her facility uses "life support" in its most commonly held description. That of 24 hours a day 7 days a week mechanically ventilated patients in an acute care hospital. Most ambulatory surgery centers do not keep patients on a ventilator to maintain life on a continuous basis. However, patients are often mechanically ventilated on an intermittent basis during some but by no means all surgical procedures. In the event a patient would have to be moved to an acute care facility, the ASC staff would manually "bag" the patient until the paramedics to arrive on the scene and remove the patient to a hospital that does have the capabilities to support life for an extended period, which is the most commonly held definition of the term "life-support". If a patient does need such drastic services during a procedure at a facility, all ASC policies require the medical personnel at the ambulatory center call 911 and use whatever procedures are necessary to keep the patient alive until the arrival of paramedics who then take control of the patient, and transfer them to a hospital with life-support equipment.
- 2) The term "general anesthesia" is quite descriptive and needs no further interpretation. However, NFPA 101 states in part, "... Where general anesthesia is used...each ambulatory health care facility shall be provided with an essential electrical system in accordance with

NFPA 99." The NFPA requirement for a Type 1 Essential Electrical System powered by a generator has two exceptions.

3) Exception No. 1 Where battery-operated equipment is provided and acceptable to the Authority Having Jurisdiction.

Exception No. 2 This requirement shall not apply to a facility that uses life-support equipment for emergency purposes only.

Exception No. 2 is quite clear. None of the facilities regulated by NFPA or CMS use life support as it is commonly used in the hospital setting. In most cases, if a patient is being transferred from a facility to a hospital, the patient would be given oxygen via portable oxygen equipment or an "ambu-bag" which is powered by human beings not a generator. The standard does seem to allow latitude in this area. NFPA 99 gives the minimum operational requirements for both generators and battery power by providing operational requirements for both, which are the same for both. It is my opinion that the original committee members meant to allow either a compatible battery system or a generator.

I have researched and visually inspected the large USP battery emergency power supply and these large systems can and do provide the same protection as any generator would provide. Many circumstances prohibit ambulatory surgical centers from using a generator, including cost, ability to obtain a location to place a generator, refusal of the property owner to allow the facility to attach to an existing building generator, inability to wire the facility to the generator in an older building, and buildings with no generator that have inadequate space to place a generator.

I respectfully request that CMS research the large battery powered equipment prior to creating a policy that states these large battery systems shall not be permitted. I feel confident that CMS will conclude that these large battery systems provide the same protection for patients as a generator and can and do meet the same safety requirements for patient care as a generator. Additionally, other accrediting organizations such as JACHO, AAAHC, and few states are NOT making the requirement for a Type I Essential Electrical System. If the Type I EES is a requirement then all organizations should be making the same requirement. If a Type I EES is not required then I would be most appreciative to be helped to understand why, so I am not making an expensive and unnecessary requirement.

I have attached my Curriculum Vitae for you to forward to Mr. Zimmerman if you think he might consider my experience helpful in his decision making process.

Respectfully Submitted,

Antoinette Gray
A. Associates

cc: NFPA
AAAASF

July 14, 2006

In accordance with a phone discussion this morning with Francis Reuer the CMS Electrical Engineer, the following is now in effect.

The exception given in NFPA 99 that states that a facility does not have to have a Type I Essential Electrical System if "life support/ventilation/assisted breathing" is only used for emergency purposes can be applied to ASC's. That means to use assisted breathing for a patient only until the arrival of paramedics or emergency crews to transport the patient from the ASC to an acute care facility. The facility **MUST have a written policy stating this is their policy. A copy of this policy **MUST** be provided to the inspector at the time of the inspection.**

If a facility EVER uses assisted breathing during a surgical procedure of any kind and/or has a written policy stating that they do so, then Type I Essential Electrical Services must be provided for the facility. A copy of the written policy must be provided to the inspector at the time of the inspection.

The facility is free to request a waiver of the Type I Essential Electrical System requirement at any time from CMS.

Antoinette Gray

**National Fire Protection Association**

1 Technology Center Drive, Quincy, MA 01906
Phone: (617) 770-6100, Fax: (617) 770-6101, www.nfpa.org

October 19, 2006

Ramer Architecture
3231 Ocean Park Blvd., Suite 222
Santa Monica, CA 90405

Attn: Richard Ramer

Dear Mr. Ramer:

This letter is in response to your email of October 16, 2006 regarding the use of a battery system as a source in an essential electrical system (EES) in NFPA 99, Health Care Facilities-2005 edition. Section 4.4.1 requires the source of an EES to be either from an on-site generator set (section 4.4.1.1) or from a battery system complying with Article 700 of NFPA 70, National Electrical Code® (section 4.4.1.2). The requirement of both types of sources has been in NFPA 99 since at least the 1995 edition.

In our phone conversation and in your email we discussed the procedures for obtaining a formal interpretation on the use of a battery system. We would not be able to issue a formal interpretation on the subject of the use of batteries as a source in an EES because Section 6.1.4 of the Regulations Governing Committee Projects states:

"6.1.4 Reasons for Not Processing. A request for an Interpretation shall not be processed if it:
(c) Involves text that clearly and decisively provides the requested information."

I feel the text in NFPA 99 is clear and decisive and therefore a formal interpretation can not be processed.

The information provided above is my personal opinion as noted at the bottom of the page and is not an official position of the NFPA. I hope this has answered your question.

Sincerely,

A handwritten signature in black ink that reads "Richard Bielen".

Richard P. Bielen, PE
Chief Systems and Applications Engineer

Important Notice: This correspondence is not a Formal Interpretation issued pursuant to NFPA Regulations. Any opinion expressed is the personal opinion of the author, and does not necessarily represent the official position of the NFPA or its Technical Committees. In addition, this correspondence is neither intended, nor should be relied upon, to provide professional consultation or services.

AAssociates, Inc.

From: "Richard Ramer" <riChard@ramer.com>
To: "Inc. AAssociates" <aassociates@verizon.net>
Sent: Monday, October 16, 2006 7:35 AM
Subject: More on batteries

Antoinette,

Well, here is the one I remember from last year. Rich Bielen is part of the team who wrote the NFPA 99 and 101. His had made it clear that the code was written to allow batteries. Therefore he says that no other letter is needed to explain what is already in black and white in the code, that batteries are completely permitted for compliance with a Type I EES. And since Type I EES systems are intended for life support systems then clearly a battery is capable of providing the necessary backup power for a life support system.

He may not be able to state the official position of the NFPA but he has still made it clear that the code says it all anyway.

Richard

Begin forwarded message:

From: Amos Slutzky <amelect@ix.netcom.com>
Date: May 31, 2005 10:53:19 AM PDT
To: riChard@ramer.com
Subject: Fwd: RE: email letter

Subject: RE: email letter
Date: Fri, 27 May 2005 11:05:36 -0400
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
Thread-Topic: email letter
Thread-Index: AcVfwHmGauVPKeZERAaXTw+OMfITVQDDMwYQ
From: "Bielen, Rich" <rbielen@NFPA.org>
To: "Amos Slutzky" <amelect@ix.netcom.com>
Cc: "Mucci, Patti" <pmucci@NFPA.org>
X-OriginalArrivalTime: 27 May 2005 15:05:42.0548 (UTC) FILETIME=
[8D20C540:01C562CD]
X-ELNK-AV: 0

Dear Mr. Slutzky:

This email is in response to your request regarding your formal interpretation request. Unfortunately, we would not be able to process a formal interpretation request on the subject matter as the text is clear.

The referenced sections in my letter clearly spell out the requirements and a formal interpretation would not apply.

The information provided above is my personal opinion as noted at the bottom of the page and is not an official position of the NFPA. I hope this has answered your question.

Sincerely,

Richard P. Bielen, PE
Chief Systems and Applications Engineer
NFPA
1 Batterymarch Park
Quincy, MA 02169-7471
617-770-3000X7948 phone
617-984-7110 fax
rbielen@nfpa.org

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From: Amos Slutzky [mailto:amelect@ix.netcom.com]
Sent: Monday, May 23, 2005 1:52 PM
To: Bielen, Rich
Subject: Re: email letter

Dear Mr. Bielen,
Thank you for your response to our letter. However, you letter stats that this is your opinion.
How do we receive an official answer to our question as to use of batteries for ambulatory and critical care for Type I or Type III .

Thanks
Amos
310-450-8752

At 11:39 AM 5/5/2005, you wrote:

From: Bielen, Rich
Sent: Monday, May 02, 2005 8:46 AM
To: 'Amos Slutzky'
Cc: Mucci, Patti
Subject: RE: Interpretation of Use of Battery system in Lieu of Generator For Ambulatory Surgical Clinics

Dear Mr. Slutzky:

This email is in response to your request regarding the use of batteries in for the essential electrical system source. NFPA 99, Health Care Facilities, 1999 edition allows batteries for the source of power for the essential electrical system (EES) requirements. Specificall, section 3-4.1.2 allows batteries for a Type 1, section 3-5.1 is the reference for a Type 2 and section 3-6.1 allows batteries for a Type 3 essential electrical system.

A surgical clinic would fall under Chapter 13, Other Health Care Facilities, which requires a Type 3 EES unless the facility uses electrical life support equipment or if there are critical care areas present. In those cases, a Type 1 system is required.

If you feel you need to share this information with Mr. Zimmerman, you have my permission to forward a copy to him.

The information provided above is my personal opinion as noted at the bottom of the page and is not an official position of the NFPA. I hope this has answered your question.

Sincerely,

Richard P. Bielen, PE
Chief Systems and Applications Engineer
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Quincy, MA 02169-7471
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this correspondence is neither intended, nor should be relied upon, to provide professional consultation or services.

From: Amos Slutzky [mailto:amelect@ix.netcom.com]
Sent: Saturday, April 30, 2005 1:46 PM
To: Bielen, Rich
Subject: Interpretation of Use of Battery system in Lieu of Generator For Ambulatory Surgical Clinics

April 29, 2005

To : Rich Bielen

From: Amos Slutzky

Re: Use of battery and or generators for Ambulatory Surgical Clinics

Dear Mr. Bielen,

We are electrical engineers working with Ramer Architects who primarily design Surgical Clinics. These clinics come in all shapes and sizes, some are B occupancies and some are I-1.2 occupancies. Many of them require Medicare Certification or a State License which requires compliance with both NFPA101 and NFPA 99. For many years we have been designing the required electrical backup systems using either UPS Batteries or generators. It is our understanding from NFPA 99 that either systems is acceptable for

Type I, II, or III essential electrical systems, including centers that work with general anesthesia.

It is our understanding that the NFPA 99 allow the use of Battery system. I am writing to you to request confirmation from you, in writing, as to the accuracy of this code interpretation. If you are in agreement, I am also requesting that you contact Mayer Zimmerman at the Department of Health and Human Services with this interpretation in order that Medicare projects can be appropriately certified by Medicare if the system is using battery system.

We find that battery system have proven to be very effective and reliable. In addition, most of the new clinics are in office buildings and there is no place to install a generator.

Thank you
Sincerely

AAssociates, Inc.

From: "Richard Ramer" <richard@ramer.com>
To: "Inc. AAssociates" <aassociates@verizon.net>
Sent: Monday, October 16, 2006 7:30 AM
Subject: Batteries

Here's another email from Mayer himself stating part of his real concern not necessarily quoting a code. I think we can show that a modern-day UPS system by a legitimate manufacturer and designed by an electrical engineer would have no adverse affect on the health and safety of the patients. In fact we might be able to show that it's safer than a generator because it's more reliable and has not toxic or safety issues such as those associated with diesel fuel.

Richard

Begin forwarded message:

From: "Zimmerman, Mayer D. (CMS)" <Mayer.Zimmerman@cms.hhs.gov>
Date: June 3, 2005 5:13:12 AM PDT
To: "Theresa Griffin" <Theresa@aaaasf.org>
Cc: "Richard Ramer" <richard@ramer.com>
Subject: RE:

Hi Theresa,
To reiterate and make sure we are clear:
An ASC could have a Type I Essential Electrical System which is powered by a battery,
BUT it is unlikely that a battery could handle both life support or anesthesia machines AND
fire protection equipment. (Too great a load).
However, a facility could ask the CMS regional office for a waiver if it can show:
1) unreasonable hardship; or 2) no adverse effect on health and safety
MZ

From: Theresa Griffin [mailto:Theresa@aaaasf.org]
Sent: Wednesday, April 27, 2005 11:28 AM
To: Zimmerman, Mayer D. (CMS)
Subject: RE:

Thank you Mayor. I look forward to receiving "the rest of the story" from you. You've been a great help clarifying these questions for us.

Best Regards,

Theresa

Theresa J. Griffin, CAE

Director of Accreditation

and Legislative Affairs

AAAASF

5101 Washington St., Suite 2F

Gurnee, IL 60031

Toll Free: 888-545-5222

Fax: 847-775-1985

From: Zimmerman, Mayer D. (CMS) [mailto:Mayer.Zimmerman@cms.hhs.gov]
Sent: Wednesday, April 27, 2005 8:49 AM
To: Theresa Griffin
Subject:

Theresa, Hi!
Following are LSC truisims:

1. CMS is the Authority Having Jurisdiction (AHJ) for LSC in ASCs.
Although the accrediting organization does the survey, only CMS can grant waivers of specific provisions of the LSC and its reference standards.
2. All ASCs which provide general anesthesia and/or life support equipment MUST have
A Type I Emergency Electrical System, powered by a generator, in accordance with NFPA 99, 1999.

More truisims to follow.
Thanks
MZ
410-786-6839

Richard Ramer, A.I.A.
'LEED' Accredited Design Professional

RAMER Architecture
3231 Ocean Park Blvd., Suite 222
Santa Monica, CA 90405

310.452.2994 phone
310.452.1954 fax
email: richard@ramer.com

*The information contained in this transmission may contain privileged and confidential information.
It is intended only for the use of the person(s) named above. If you are not the intended recipient,*

AAssociates, Inc.

From: "Richard Ramer" <richard@ramer.com>
To: "Inc. AAssociates" <aassociates@verizon.net>
Sent: Monday, October 16, 2006 7:27 AM
Subject: Fwd: Question

Antoinette,

Here is one email from earlier in the year with my question and the answer from someone who is deeply involved in the management of the NFPA 99 code. It explains Mayer Zimmerman's position, referring to another document requiring generators when life support is involved. And as you well know the definition of life support is ambiguous at best. I wonder who wrote the Code of Federal Regulations that he refers to below. But one interesting point is that this code may be intended for nursing homes not surgery centers. Perhaps that is the direction to take this argument.

Richard

On Sunday, January 8, 2006, at 06:21 AM, Douglas S. Erickson wrote:

Dear Mr. Ramer:

I feel your anguish. As Chairman of this document and a member of the committees that have written the standards over the past 30 years, I have always been of the opinion that an emergency electrical power system can be powered by batteries. If these systems are installed in accordance with NFPA 111, they do meet the intent of NFPA 99.

Now for the unfortunate part of the discussion. As you mention, CMS is not permitting this type of system unless a waiver is acquired. I have done my best to change this position but to no avail. The reason for my failure is quoted by Mayer Zimmerman of CMS:

I quote the Code of Federal Regulations (cfr): [for nursing homes] 42CFR483.70(b)(2)"

"where life support systems are used, the facility must provide emergency electrical power

with an emergency generator (as defined in NFPA 99 Health Care facilities) that is located on the premises..."

So, you need a generator where you have life support because the CMS REGS REQUIRE

A GENERATOR! We did NOT say emergency power per NFPA 99, we said a generator as defined in NFPA 99.

We are attempting to change Mr. Zimmerman's opinion but he continues to quote the CFR. Sorry I can't be of more assistance but this is not only fighting city hall, it is fighting the federal government. There have been small Ambulatory Surgical Centers that have been successful in getting a waiver to permit

battery powered systems.

Sincerely,

Douglas Erickson

--

**Douglas S. Erickson, FASHE
Consultant, ASHE
cell: 847-347-0627
office: 340-713-1770
fax: 340-713-1771
derick@bigplanet.com**

<image.tiff>

**From: Richard Ramer <richard@ramer.com>
Date: Fri, 06 Jan 2006 13:18:29 -0800
To: <derick@bigplanet.com>
Cc: <rbielen@NFPA.org>
Subject: Question**

Dear Mr. Erickson,

Rich Bielen gave me your name yesterday. He and I are discussing the issue of the use of generators and batteries as backup sources of power in outpatient surgery centers. The NFPA code allows either one but Medicare interprets it in a way that discourages the use of batteries. In fact, they don't want them at all unless someone applies for a waiver which takes several months to obtain and is not guaranteed to be given.

So, I am working with Rich to try to find a way to convince Medicare to change their tune and allow what the NFPA code allows, either batteries or generators. The types of facilities that would use batteries would use a UPS system. They are useful up to about 15KW. Anything above that amount of power would use a generator anyway. So, this type of system is only meant for small facilities.

This is an overview and synopsis of the reason for why I am contacting you. I would like to discuss this with you further and get your opinion on this.

Thank you.

**Richard Ramer, A.I.A.
'LEED' Accredited Design Professional**

**RAMER Architecture
3231 Ocean Park Blvd., Suite 222
Santa Monica, CA 90405**

ENCLOSURE D

HITF Brief – December 8, 2006
Alcohol Based Hand Sanitizer - Level 1 Aerosol Products
Dale Woodin, ASHE

Purpose: Educational only (no action required), to brief the HITF on current research by the Consumer Specialty Products Association (CSPA) to demonstrate aerosol hand rub products can be used as safely as non aerosols.

Pending Action: CSPA has sponsored testing to support deletion of IFC 2006 Section 3405.5.1 (Corridor installations) that states “Aerosol containers shall not be allowed in corridors”. In addition, CSPA has submitted Proposal F190-06/07 for two changes in 3405.5.1:

1. Level 2 and Level 3 aerosol containers shall not be allowed in corridors. And
2. The maximum capacity of each Class I or II liquids dispenser shall be 41 ounces and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (.51Kg).

Brief: Section, 3405.5, regulating alcohol based hand rubs, was added to the IFC in the 2006 Edition based on a report prepared by Gage-Babcock & Associates, Inc for ASHE. The report was developed for Class I and II liquids for use in Health Care Facilities. Fire modeling was used to show that 41 oz. (1.2 l) maximum Class I liquids are acceptable in corridors. Because aerosol products were not addressed in the report, they were specifically prohibited.

The attached report demonstrates that aerosol hand rub products can be used as safely as non aerosols because:

- Chemical Heats of Combustion of the aerosol products were calculated to be well under the boundary between Level 1 and Level 2 aerosols. Level 1 Aerosols are treated as Class III commodity.
- The aerosol container capacity in the proposal is less than ½ the quantity of the liquids currently approved.
- The containers do not burn and do not easily release their contents to fuel a fire.
- The thermal integrity of the container is such that no contents should be opened to a fire until air temperatures well above 200° F have been reached. These temperatures would make the corridor unusable.

Fire testing has shown that containers in the palletized arrays have not burst until the carton wall has burned away and flames have actually been impinging on the container. Also, aerosol containers do not burst or rupture spilling their contents if dropped from heights used in normal handling and use of the hand sanitizers.

The aerosol container for this product includes a metal can, designated as 2 Q which must meet DOT regulations requiring that it not deform below a pressure of 180 psig or burst below a pressure of 270 psig, along with the valve and valve cup which is sealed to the can. The product is hermetically sealed in the container and will undergo no internal changes once it is filled. After the containers are filled and sealed every container of product goes through a hot water bath. The temperature and duration in this bath is such that the internal pressure of the aerosol container reaches that which would be reached at an equilibrium temperature of 130° F ensuring that none of the cans will leak.

F-190
Alcohol Based Hand Sanitizer
Level 1 Aerosol Products

Prepared For: Consumer Specialty Products Association
By David L. Fredrickson of Fredrickson & Associates LLC

Section, 3405.5, regulating alcohol based hand rubs, was added to the IFC in the 2006 Edition. Included in the new regulations was section 3405.5.1 Corridor installations. This section on corridors was added based on a report prepared by Gage-Babcock & Associates, Inc. The report was developed for Class I and II liquids for use in Health Care Facilities. Fire modeling was used to show that 41 oz. (1.2 l) maximum Class I liquids are acceptable in corridors.

Aerosol products were not addressed in the report, thus the first item in Section 3405.5.1 states that: 1. Aerosol containers shall not be allowed in corridors.

Fire modeling was not used in this study to justify deletion of the prohibition because the modeling is not replicable primarily due to the thermal integrity of the container. Fire testing has also shown that containers in the palletized arrays have not burst until the carton wall has burned away and flames have actually been impinging on the container. Also, aerosol containers do not burst or rupture spilling their contents if dropped from heights used in normal handling and use of the hand sanitizers.

Instead this report intends to demonstrate aerosol hand rub products can be used as safely as non aerosols because:

- The aerosol products covered by this proposal have equivalent chemical heat of combustion as compared to the approved liquids.
- The quantity of flammable material is less than half that already approved.
- The containers do not burn and do not easily release their contents to fuel a fire.
- The aerosols will not become involved in a fire or release their content before the temperatures in the corridor make it unusable.

Consumer Specialty Products Association (CSPA) has sponsored testing and this report to support a code change to allow Level 1 aerosol hand sanitizer products in corridors. That code change Proposal #F190-06/07 was submitted on behalf of the (CSPA) and allows Level 1 aerosols, an ordinary combustible, in the corridor subject to the same controls as liquid hand rubs and with less than half the quantity. The proposal is for the 2006/2007 Code Development Cycle of the International Code Council for consideration during the Code Development Hearings scheduled for September 20-30, 2006 in Orlando, FL. Proposal F190-06/07 has two changes in 3405.5.1 Corridor installations. They are:

1. Level 2 and Level 3 aerosol containers shall not be allowed in corridors. And
2. The maximum capacity of each Class I or II liquids dispenser shall be 41 ounces and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (.51Kg).

Aerosol products, in general, are composed of a base product, a propellant and a container. The base product is composed of the constituents (formula) that is intended to do the job for which the product is designed. This includes; a large number of consumer and commercial products such as personal care, household cleaning and maintenance, automotive, insect control and many other product types including the hand sanitizers we are dealing with in this code change proposal.

The propellant is either a liquefied or compressed, gas or gas blend, which expels the contents from the container. The propellant may also help with solvency of constituents within the base product and with proper physical form of the product as it exits the container.

In this case the aerosols are composed of an alcohol/water blend with foam generating surfactant as the base product and less than 10% propellant, consisting of a fluorinated hydrocarbon and hydrocarbon blend.

The container, includes the can, and in its total design is intended to hold and dispense the product. Part of this design incorporates the fact that it is an airtight package which once filled and sealed must meet rigid Department of Transportation (DOT) specifications as will be noted later in this report. The container is hermetically sealed and the contents have no contact with the outside atmosphere until released from the container.

For consumer use, aerosol products are regulated by the Food and Drug Administration (FDA), the Consumer Product Safety Commission (CPSC), the Environmental Protection Agency (EPA) or any other appropriate governmental agency. These agencies deal with all labeling on the container such as warnings, directions and all precautionary statements. The warnings section of the aerosol hand sanitizer containers contain the followings statements:

- Flammable, Keep away from fire or flame.
- Contents under pressure.
- Do not store at temperatures above 120° F (49° C), puncture or incinerate.

The hand sanitizers in this proposal are regulated by the FDA as Over The Counter drugs. The Center for Disease Control (CDC) does recommend the use of alcohol hand antiseptics in conjunction with traditional hand washing.

For shipping purposes aerosol products are regulated by the DOT.

For manufacturing, storage and display purposes aerosol products are regulated by Fire and Building Codes such as IFC chapter 28 and NFPA 30B. In these codes aerosol products are broken into three categories based on the total Chemical Heat of Combustion of all constituents inside the container. This includes the base product and the propellant.

Separation into these 3 categories, Level 1, Level 2 and Level 3 is based on a large number of full scale and small scale fire tests with multiple pallet load quantities of aerosols and other research including single can tests conducted by Factory Mutual Research Corporation. These levels are defined in IFC Chapter 28 Section 2802.1 Definitions. Level 1 aerosols contain up to 8600 Btu/lb (20 kJ/g) and are further determined, for fire protection purposes, to be equivalent to Class III commodities as per NFPA 13. This is noted in Section 2804.1 of the IFC which states: “Level 1 aerosol products shall be considered equivalent to a Class III commodity ...”. Level 2

and Level 3 aerosol products have higher chemical heats of combustion and require specific protection as per the Tables in NFPA 30B. Item #F190 is very specific on not allowing Level 2 and 3 aerosols in the corridor.

The hand-sanitizer aerosols which we are dealing with in this code change proposal have formulas very similar to the liquid products currently approved in Section 3405.5.1 Corridor installations, of the IFC. Chemical Heat of Combustion of the aerosols under consideration were calculated and the products were confirmed to be Level 1 aerosols and to have similar Chemical Heat of Combustion as the liquid formulas currently approved in the 2006 IFC Section 3402.1. Please see Table 1.

Table 1
Chemical Heat of Combustion (BTU/lb)

Level 1 Aerosol	Less than or equal to 8600
Aerosol A (56% Ethyl Alcohol)	6448
Aerosol B (54% Ethyl Alcohol)	6113
Liquid 1 (62% Ethyl Alcohol)	7480
Liquid 2 (56% Ethyl Alcohol)	6603
Liquid (70% Isopropyl Alcohol/30% water)	8246
Liquid (70% Ethyl Alcohol/30% water)	7434

The aerosol products, for which the calculations are made, are existing hand sanitizer products which are being distributed by two different companies. The liquids shown are also existing products from two different companies except for the 70% alcohol liquids which are the maximum % alcohol currently allowed for alcohol-based hand rub in 3402.1.

Also to be noted is that the maximum size of the aerosol container is 18 ounces (.51 kg) compared to the liquid container maximum size of 41 ounces as shown in 3405.5.1.

The aerosol container for this product includes a metal can, designated as 2 Q which must meet DOT regulations requiring that it not deform below a pressure of 180 psig or burst below a pressure of 270 psig, along with the valve and valve cup which is sealed to the can. As noted before, the product is hermetically sealed in the container and will undergo no internal changes once it is filled. After the containers are filled and sealed every container of product goes through a hot water bath. This is an additional quality test required by DOT as per 49 C.F.R. Section 173.306 (3) (v). The temperature and duration in this bath must be such that the internal pressure of the aerosol container reaches that which would be reached at an equilibrium temperature of 130° F. This does ensure that none of the cans will leak. While going through the water bath containers will show any leakage as bubbles which will be noted by inspectors. The water bath does not cause any deterioration of the product or the container and 100% of the approved containers are leak free and will not deform at internal temperatures up to 130° F.

Enclosure 1 shows an aerosol hand sanitizer from one supplier in a wall holder and in normal use. Enclosure 2 shows an aerosol hand sanitizer from a different supplier in a wall holder.

Testing was done to provide pressure versus temperature curves which indicate the temperature at which the container might lose its contents. A modified ASTM test method was used with

1800 psi stainless steel pressure vessels equipped with 0-300 psi ASTM Reid Vapor Pressure test gages. The tests were conducted using formulas supplied by two different aerosol suppliers. The pressures were obtained every 10° F from 70° F to 200° F. The bath temperature was held at each temperature to ensure product had attained that temperature before the pressure reading was taken.

Two separate samples were run from each supplier. The test bath, containing two separate steel pressure vessels, is shown in enclosure 3. The mixer motor and the pressure test gages can easily be seen. Readings on the two separate pressure test gages can be seen in enclosure 4. Enclosure 5 shows the stainless steel pressure vessel used in the test.

Chart 1 shows the pressure versus temperature curves of each of the 2 samples from each supplier (Product A and Product B). As can be seen the curves from the two separate samples of each Product (A & B) are very close to one another. The curves from each Product have been averaged and put into a single curve for each product as shown in Chart 2. The difference in the curves of the two products is due to differences in the formulas of the 2 products.

In DOT requirements of Section 173.306 (3) (ii) the pressure in the container must not exceed 180 psig at 130° F. Chart 2 clearly shows that this pressure is not exceeded and the container will not release its contents until reaching temperatures of well over 210° F for Product A and 233° F for Product B.

In summary Level 1 aerosol hand rubs can be safely used in corridors because:

- Level 1 aerosol are treated as Class III commodity.
- Chemical Heats of Combustion of the aerosol products were calculated to be well under the boundary between Level 1 and Level 2 aerosols.
- Chemical Heat of Combustion are equal to or lower than the liquid products currently approved.
- The aerosol container capacity in the proposal is less than ½ the quantity of the liquids currently approved.
- The structural integrity of the container is substantially better than those already allowed and the container is not combustible.
- The thermal integrity of the container is such that no contents should be opened to a fire until air temperatures well above 200° F have been reached. These temperature would make the corridor unusable.

Aerosol based hand rubs are as safe as other hand sanitizers for use in corridors under the conditions found in International Fire Code section 3405.5.

Alcare Plus[®] Antiseptic Handrub with Emollients

Alcare Plus Antiseptic Handrub with Emollients is a foamed, alcohol-based healthcare personnel handwash. This product contains 62% ethyl alcohol by volume providing fast-acting, broad-spectrum antimicrobial activity against pathogenic microorganisms. It spreads easily to facilitate even distribution over all skin surfaces for effective disinfection, and contains emollients that moisturize skin with each use.



Fast-acting antimicrobial personnel handwash
with added emollients that moisturize skin

STERIS[®]

Applied Infection Control



Enclosure 2



Enclosure 3



Enclosure 4



Diversified CPC International

Hand Sanitizer

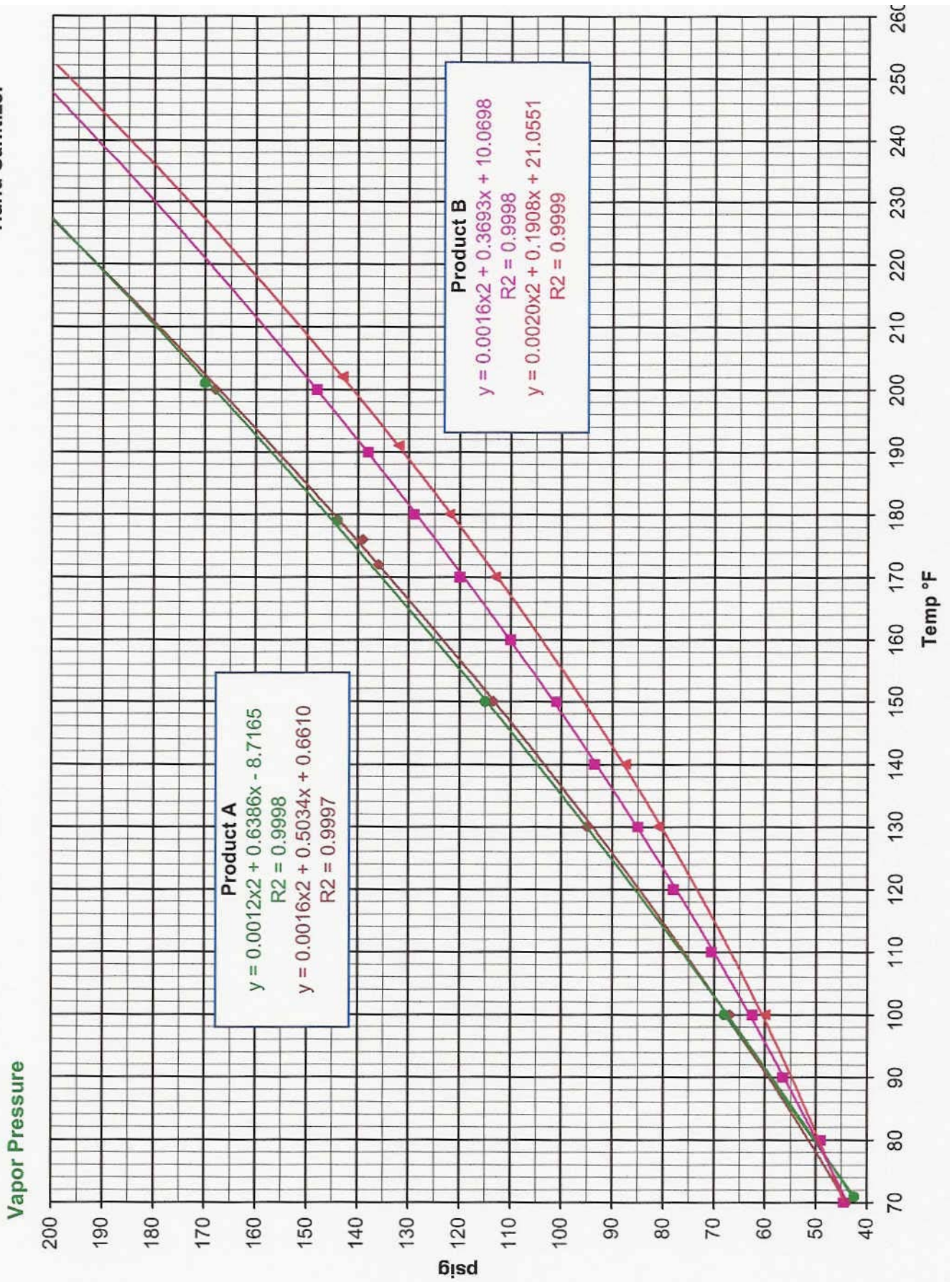


Chart 1

Diversified CPC International

Hand Sanitizer

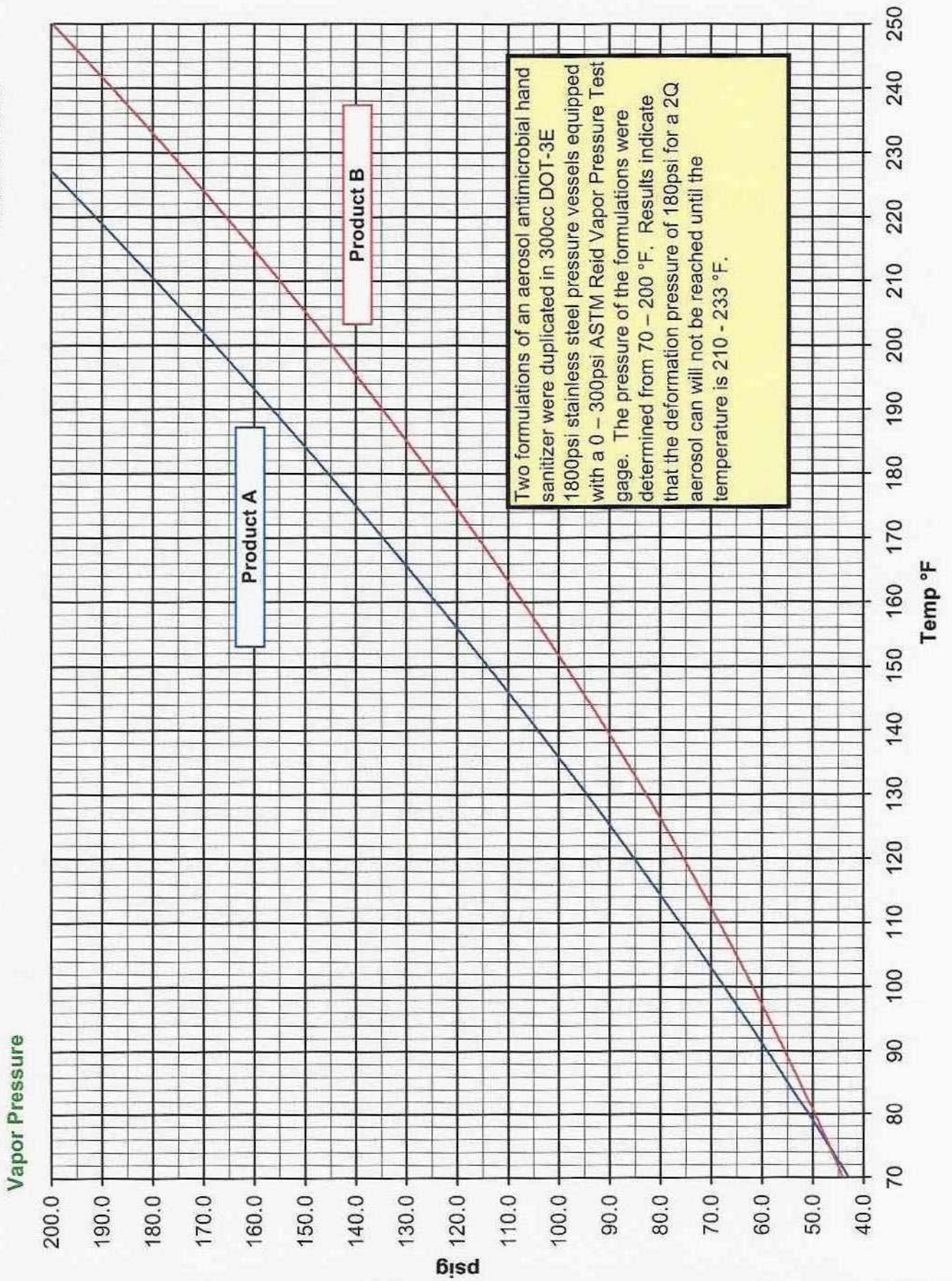


Chart 2

ENCLOSURE E



Formal Interpretation Request Form

(This information is requested in Section 6 of the Regulations Governing Committee Projects)

Name: Michael Earl Dillon, PE, C.Eng.
Company: Dillon Consulting Engineers, Inc.
Address: 671 Quincy Avenue Long Beach, CA 90814-1818
Phone: (562) 434-4640 Fax: (562) 434-4670

NFPA Document No.: 90A Edition: 2002 Paragraph Reference: 4.3.11.1 and 3.3.5 and 3.3.21
NFPA Membership # 111407

Did this question arise from an actual field situation? Yes No

Please state your business interest in the matter and identify other parties involved:
Dillon Consulting Engineers, Inc. - Mechanical engineering consultant to the design team.
Project - Sunrise Assisted Living in Wilmette, IL.
Architect - John I. Mills, AIA of BerryRio Architecture + Interiors in Springfield, VA.
Primary mechanical engineering firm - S3E/Klingemann in Springfield, VA
Regulatory matters consultant - Matthew J. Murer, Esq. of Schiff Hardin, LLP in Chicago, IL
AHJ - Michael J. Jontry of State of Illinois Department of Public Health.

Question (should be worded so that it can be answered with either yes or no):

Question # 1. When the resident's room's windows are closed, can the 50 cfm of air exhausted from the bathroom and drawn from the room in general be in whole or in part made up by infiltration through the NFPA 80-complying clearances around and under the corridor door due to the resultant pressure differences?

Question #2. Does the corridor described constitute a plenum or air duct as these terms were intended to apply under 90A?

A

Please see attached page for description of problem.

Signature: _____ Date: 8/23/2004

Mail to: Secretary, Standards Council • National Fire Protection Association
One Batterymarch Park, PO Box 9101 • Quincy, MA 02269-9101
Fax No. 617-770-3500

Attachment to Formal Interpretation Request Form

NFPA Document: 90A, 2002 Edition, Paragraphs 4.3.11.1, 3.3.5 and 3.3.21

Project Description:

Each resident's room contains a sleeping and living area, a bathroom and a personal effects closet. Each resident's room receives code compliant natural light and ventilation through openable windows in the exterior wall. Each resident's bathroom is mechanically ventilated through an exhaust grill balanced to extract 50 cubic feet per minute of air continuously. Exhaust is accomplished by one of several ducted exhaust systems served by roof-mounted exhaust fans. Make-up air comes from the volume of the resident's room. Each resident's room is heated and cooled by a fancoil entirely contained within the room. The fancoil has no connection to the outside by duct or otherwise; it simply recirculates the air within the resident's room, adding heat or cooling in response to a room thermostat. The common corridor serving the rooms is independently conditioned by rooftop unitary gas-electric package units which supply air to the corridors and other common areas. Approximately 70% of the supply air is returned to the units and 30% is drawn from the outside in order to provide adequate fresh air and maintain the building at a mildly positive pressure relative to the outdoors. The corridor doors are installed to maintain the clearances set forth in NFPA 80-1999 in Tables 1-11.4 and 2-3.17.

Formal Interpretation

NFPA 90A

Standard on Air-Conditioning and Ventilating Systems 2002 Edition

Reference: 4.3.11.1, 3.3.5 and 3.3.21

F.I. No. 90A-02-3

QUESTION #1: When the resident's room windows are closed, can the 50cfm of air exhausted from the bathroom and drawn from the room in general be in whole or in part made up by infiltration through the NFPA 80 complying clearances around and under the corridor door due to the resultant pressure differences?

ANSWER: Yes

QUESTION #2: Does the corridor described constitute a plenum or air duct as these terms were intended to apply under 90A?

ANSWER: No

Issue Edition: 2002

Reference: 4.3.11.1, 3.3.5 and 3.3.21

Issue Date: January 24, 2006

Effective Date: February 12, 2006