Joint Committee on Food Equipment Meeting

NSF International
Ann Arbor Michigan
June 17, 2008
8:30 – 4:00 pm
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# Joint Committee – Food Equipment

**June 17, 2008**

**Draft Agenda**

**Tuesday June 17, 2008**

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<td><strong>Tab 1</strong></td>
<td><strong>Effects One or More of the Food Equipment Family of Standards</strong></td>
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<td>Glass requirements (FE-2008-14)</td>
<td>G. Coleman</td>
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<td>K. Smith</td>
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<td>L. Badman</td>
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<td>Formation of TG for JC Membership Recruitment</td>
<td>L. Badman</td>
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<td>Coolers/freezers plastic liners (FE-2008-2)</td>
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<td>5.43 Steam tables and bains-marie (FE-2008-13)</td>
<td>M. Kohler</td>
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<td>B. Pourkomailian</td>
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<td>Compressor run time (FE-2007-13)</td>
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<td>D. Beard</td>
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<td>6.2 – Organic coatings Modifications (FE-2008-12)</td>
<td>M. Kohler</td>
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<td><strong>Tab 11</strong></td>
<td><strong>NSF/ANSI 59 – Mobile Food Carts</strong></td>
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<td>Boilerplate modifications (FE-2008-3)</td>
<td>M. Perez</td>
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<td>Item Description</td>
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<td>3:50</td>
<td>13</td>
<td>TG on Warewashing – Updates (FE-2008-5)</td>
<td>J. Hipp</td>
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<td>TG on NSF/ANSI 6 Updates (FE-2008-8)</td>
<td>R. Brandt</td>
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<td>TG on Food Equipment Fabrication (FE-2008-10)</td>
<td>J. Brady</td>
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<td>3:58</td>
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<td>Meeting summary / Next meeting date</td>
<td>S. Tackitt</td>
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<td>4:00</td>
<td>14</td>
<td>Adjournment</td>
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March 13, 2007

I  Opening Remarks

Joint Committee Chairperson Steve Tackitt convened the meeting, and read the antitrust statement. He also welcomed the Committee members and observers, and introduced the new members.

II  Review of Agenda

Motion: The ceramic knives presentation has postponed until a future date. The March 2007 proposed agenda is acceptable with the postponement of the ceramic knives. B. Gale moved, R. Coffman seconded.

Vote: All were in favor.

Motion passed.

III  Review Meeting Summary

Motion: The March 2005 draft-meeting summary of the Joint Committee on FE meeting be accepted. J. Hipp moved, D. Bottens seconded.

Vote: All were in favor.

Motion passed.

IV  Effects one or more of the food equipment family of standards

A. Ceramic knives (FE-2006-4)

The presenter notified NSF that he would be unavailable to attend the meeting. This topic is postponed until future date.

B. RTV (FE-2007-2)

Over time the use of RTV has decreased due to better design of equipment. The market place is requesting cleanable equipment. Problems exist where RTV is being used to fill/reduce a gap. Failures are from over use of RTV or improper application.
The JC does feel more data is needed to better define in what type products and applications RTV should not be used. The information will be hard to gather due trace ability. Information can be found on unclean equipment causing contamination. The food source of an outbreak is impossible to find. What is the nature of the problem? Does testing need to be completed to determine if RTV can be cleaned? Can harbor bacteria? What about deterioration? Temperature variation? Moisture variation? Is it an application issue?

More detailed information needs to be gathered to see if trends exist in certain types of equipment or application. Regulatory members of the JC offered to help in collecting digital images of specific equipment with RTV issues (Santa Clara County and G. Nakamura would pursue through NEHA). The JC was reminded that data would need to be collected on RTV that is integral to the product not the RTV used in a field application. Data would need to be focused on listed products. The TG could use the survey food contact list provided by J. Brady

The JC does not feel a total ban on RTV is needed. A motion was made at the last JC to eliminate RTV in direct food contact areas in future ballots. Should the ban be placed on equipment that is used on ready to eat food with liquid due to Listeria issue? Standard should push manufacturers to design more hygienic equipment.

**Motion:** TG should request assistance from the regulatory group in gathering information on potential RTV issues with specific direct contact equipment in the field usage. Based on the data gathered, a recommendation from the TG should be given to the JC. D. Neghandi moved; L. Howington seconded.

**Discussion:** TG would have eventually gotten to this point. JC should provide clearer direction.

**Vote:** K. Smith, B. Harrington, T. McNeil, T. Carotenuto - opposed.

**Motion passed.**

**Motion:** Modify the gap requirement from 1/8 in to 1/32 in gap for manufacturer joints using RTV in direct food contact zones. T. McNeil T. Carotenuto

**Vote:** All in favor

**Motion passed.**

C. Cutlery (FE-2007-9)

This product is being used throughout Europe and Canada. There are no health code violations in Canada. Media is an absorbent corncob that is a benign product once chopped up. Corn cob media is used throughout the world and can act as an abrasive media.

Food code needs to be changed to allow this type of equipment/procedure to be used in the United States. The code prohibits hand drying of dishware. FDA has a laundry list that would need to be addressed. 1. Need to be assured media doesn’t present a hazard in a food contact surface. 2. How is this practice sanitary? Need standard to address. and other questions. Development of the Standards and change in the code could be done at the same time.

The machine has to warm up prior to the cutlery beginning added or the media will stick to the cutlery. The cutlery is wet when placed in the machine. Moisture is absorbed by heat given off by Kal rod. Media needs to be changed very four hours or the media will break down to a dust. Media passes by UV light. The UV is used for inactivation. If an issue rises with the UV, you would need to turn up the heat to ensure microbial kill.
It was suggested to have an action case study from Europe and testing done with the media and bacteria. Studies should focus on what happens to residual bacteria. The efficiency of the unit is dependant on the operator.

**Motion:** Form a TG to evaluate the requirement the needed for this product. K. Northcutt and J. Hipp seconded.

**Discussion:** Other manufacturers in the market place, need to consider all models. Need evaluate corn husks and microbial issues.

**Vote:** all in favor

Motion passed.

Task Group – Paul Douglas (Chairman), Bob Harrington; Tom Johnson; Kirk Northcut; Paul Douglas; Phil Mason; Gary Coleman

V NSF/ANSI 2 Food equipment

A. Boilerplate – Hex key screws (FE-2005-18)

T. Gagliardi would like to move away from using hex key fastners in the splash zone. Caps are used with hex key fastners but caps end up on the floor. Caps are not part of routine maintenance. Silicone is also used to cap the ends of hex key fastners.

Hex head less likely to have harborage and are restricted to splash or nonfood zone. What about an abrasion, scrapping or vibration test? Should the sealant requirement be removed? The soil trap can draw insect and pests to that area. Manufacturers do not like to use hex heads. Hex key fastners could not be limited to heavy equipment with certain torque requirement. What about a friction type fit as alternative or adhesion type capability? Pop rivets are a bigger problem than hex heads. Standard prohibit use of fillers in refrigerators.

No action will be taken at this time.

B. Boilerplate – Equipment legs (FE-2005-19)

**Motion:** The language proposed regarding a 10 in (25 cm) from the point of cleaning access in FE-2005-19 should be sent to ballot. D. Negandhi moved, B. Gale seconded

**Vote:** All were in favor.

Motion passed.


**Motion:** No gaps allowed in the breath zone, overlapping glass for ventilation permitted (1 ½ max) should be sent to ballot. B. Harrington moved. T. Mc Neil seconded

**Discussion:** Gaps are there to allow for hard ware. Gaps strategically placed between food bins. A sneeze will contaminate food. 2 inches gaps are permitted between panels and the Standard does not require hardware.
Friendly amendment to motion: The issues below should be sent to the TG as recommendations from the JC for consideration as a revision to the Standard for ballot. B. Harrington moved, T. Mcneil seconded

FE – 2007-5 No gaps allowed in the breath zone, overlapping glass for ventilation permitted (1 ½ max)

FE 2007 – 7 Provide open and closed locked position. Limit range of adjustment to existing standard

FE-2007 –8 Further investigation suggested.

Additional members for the Task Group – B. Harrington; T. Gagliardi; T. Carotenuto, G. Nakamara

**Vote:** All were in favor.

**Motion passed.**

VI NSF/ANSI 3 Commercial warewashing equipment

A. Incorporation of boilerplate (FE-2005-21)

**Motion:** The proposal in FE-2005-21 should be sent to the Task Group for consideration. D. Bottens moved. K. Northcut seconded.

**Vote:** All were in favor.

**Motion passed.**

B. 5.1.5 - Water Supply Protection (FE-2007-3)

Letter drafted and sent to ASSE 1004. NSF regulatory person attended the meeting. The Standard was not on the agenda. ASSE 1004 is currently open for revision. Interested parties should contact ASSE to participate in revision process.

C. Potable water rinse (FE-2007-10)

It is being recommended that a post sanitizing rinse be added for warewashing equipment to allow hot dishes to be handled sooner or to remove the chemical sanitizer. This rinse would be cool potable water. An option would be available to turn off the post sanitizing rinse. Concerns were raised over the additional water usage, drying time of the ware, sanitizer concentration measurement by the operator and slip hazard in kitchen. The post sanitizing rinse uses only 20% of the water from the final rinse. Sanitization occurs in 7 to 10 seconds, diluting of the sanitizer in the post sanitizing rinse will not affect the inactivation of the microbes.

**Motion:** Accept proposal as written in FE-2007-10. T. Johnson moved. D. Bottens seconded

**Discussion:** This is a move backwards from the existing standards. The rinse is potable water used strictly for cooling. As proposed, this would be in conflict with the Food Code. The Conference would need to be approached and agree with the proposal.

Motion passed.

VII NSF/ANSI 4 Commercial cooking, rethermalization, and powered hot food holding and transport equipment

Hollow section of doors (FE-2007-1)

Motion The following language should be drafted into NSF/ANSI 4 5.9.5.1 and sent to ballot:

Openings to hollow sections of dry heat oven doors are allowed up to a width of 1/32 in (0.031 in, 0.079 cm).

R. Coffman moved, T. Gagliardi seconded.

Vote: All were in favor.

Motion passed.

VIII NSF/ANSI 6 Dispensing freezers

Incorporation of boilerplate (FE-2005-20)

Motion: The proposal in FE-2005-20 should be sent to the Task Group for consideration.
D. Bottens moved, J. Brady seconded.

Vote: All were in favor.

Motion passed.

IX Committee administrative issues

A. Discussion forum (FE-2007-4)

D. Negandhi would request that a chat room/blog be available for JC members to use during the balloting system. L. Badman stated a format will be available as part of the second generation of the balloting system.

B. Proposed NSF 174 – Mobile food units

M. Perez will chair this TG once the food shields TG has completed its work.

C. New balloting system

L. Badman demonstrated the new balloting system for the JC. The JC requested that the ‘submit’ button be changed to a ‘save’ button and a list names and contact information of JC members be available.
XII Other business

J. Wilson informed the JC that the Conference sent a letter regarding a change to NSF/ANSI 3, which had been incorporated into the Standard, and an issue dealing with *Listeria*. NSF sent a letter requesting more information on the *Listeria* issue but to date had not heard anything back. If you would like a copy of the letters, please contact L. Badman.

K. Smith announced that the supplement to the Food Code should be available in July 2007.

J. Scanlon volunteered to help G. Coleman on his NSF/ANSI 5 project.

XIII Meeting Summary

ADJOURN
Meeting Participants

Joint Committee Members

Chairperson, Steve Tackitt (Barry-Eaton District Health Department)  
Stefano Bortolotti (Carpigiani)  
Dan Bottens (IMI Cornelius Inc.)  
Jim Brady (Wawa, Inc.)  
Rex Brandt (Taylor Co.)  
Tony Carotenuto (Navy Environmental Health Center)  
Roger Coffman (Lake County Health Dept.)  
Gary Coleman (Underwriters Laboratories)  
Tony Gagliardi (Forsyth Co. Health Dept.)  
Ben Gale (Santa Clara Co., DEH)  
Jon Hall (Glastender)  
Robert Harrington (City of Casper-Natrono Co. Health Dept.)  
Joel Hipp (Hobart Corp)  
Larry Howington (ARI/CRMD)  
Tom Johnson (NAFEM)  
Mike Kohler (NSF International)  
Gary Maxon (Delfield)  
George Nakamura (Retired - Contra-Costa County Environmental Health)  
Dipak Negandhi (DIFC/Groen)  
Kirk Northcutt (Auto-Chlor System)  
Michael Perez (Baring Industries)  
Kevin Smith (Food & Drug Administration)  
Michael Zagorski (McDonald’s Corp)  

Joint Committee Members not in attendance

Barrie Clarke (Norwegian Cruise Lines)  
James Drew (Manitoba Health)  
Donna Garren (Nat’l. Restaurant Assn.)  
Blake Nordin (Minnesota Department of Health)  
Paul Pankratz (EcoLab Inc.)  
Michael Rice (Michigan State University)  
Todd Stephens (South Carolina Dept. of Health)  
George Zawacki (Up Your Stack)  

Observers

Dianne Benjamin (FDA)  
Amy Cashen (Delfield)  
Paul Douglas (Campus Products)  
Phil Mason (Intertek)  
Alex Mazingue (Premier1Source, Inc)  
Fred Minelli (Kysor Panel Systems)  
Russ Payzant (American Dish)  
Richard Pittenger (Hobart)  
Dean Stanley (AccuTemp Products)  
Nick Snyder (Randell)  
John Scanlon (Hatco)  
Jack Schweitzer (Premier1Source, Inc)  

NSF International Staff

Lorna Badman  
Nancy Culotta  
Joe Phillips  
Jane Wilson
Tab 2
Joint Committee Issue Document

NOTE: An issue document may be submitted at any time – it comprises two parts: the cover sheet (this page) and a description of the issue to be submitted to the Joint Committee (following page). A separate issue form is required for each issue submitted. Issue papers include proposals for modification of a standard, information reports and (of current research, etc.). An issue paper shall be categorized as being for ACTION or for INFORMATION. Submitters should limit the Issue Paper to 1 or 2 pages – attachments detailing full recommendations or background information may be attached with supplementary information. The Chairperson of the appropriate Joint Committee will respond within 30 days of receipt of the issue document advising what steps will be taken. Any issue document intended for discussion at a Joint Committee meeting must be received at least 21 days prior to the meeting to ensure inclusion in the agenda.

Submit to:

NSF International
Attn: Standards Department
789 Dixboro Rd.
Ann Arbor, Michigan 48105

Fax: 734-827-6831
e-mail: standards@nsf.org

Submitter’s contact information:

Name: Gary Coleman
Company: Underwirers Laboratories Inc.
Mailing Address: 12 Laboratory Dr
City: Research Triangle Park State: NC Zip Code: 27709-3995
Telephone Number: 919-549-1732 E-mail: gary.coleman@us.ul.com

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Signature of Submitter *Gary Coleman Date: May 27, 2008

*Type written name will suffice as signature
Please indicate if you wish the item to be considered as an action item or as an information item.

Action: ☒ Information: ☐

NSF Standard(s) Impacted:
NSF 2, 5.44.3
NSF 4, 5.29.3
NSF 7, 5.30.3
NSF 8, 5.23.3
NSF 12, 5.24.3
NSF 20, 5.21.3
NSF 169, 5.21.3

Issue Statement:
ANSI Z97.1, American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test, has been revised to specify three classes of glass performance - Class A, Class B, and Class C. Class A requires a drop height between 48 inches and 48.5 inches (1219 mm and 1232 mm) using an impact specimen appropriate to the size classification (as determined by 4.3 of ANSI Z97.1). Class B requires a drop height of between 18 inches and 18.5 inches (457 mm and 470 mm) using an impact specimen appropriate to the size classification (as determined by 4.3 of ANSI Z97.1). Class C is for fire-resistant wired glass only, and requires a drop height of between 12 inches and 12.5 inches (305 mm and 318 mm) using an impact specimen size of 34 inches by 76 inches (863 mm by 1930 mm).

Background:
Classes B and C are not considered equivalent to Class A. By not specifying the class of ANSI glass that must be used, the potential exists for allowing a glass to be used that is not as impact resistant as originally intended by the NSF standards, which could result in an increased probability of food contamination resulting from damaged glass.

Recommendation:
It is proposed that the aforementioned standard be revised as follows:

Glass, other than light fixtures, that may be subject to contact during use and routine maintenance and cleaning shall conform to:
- The impact test in ANSI Z97.1 for Class A glass; or
- The impact test within ANSI/UL 197.

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Submitter: Gary Coleman  Date: May 27, 2008
Joint Committee Issue Document

NOTE: An issue document may be submitted at any time – it comprises two parts: the cover sheet (this page) and a description of the issue to be submitted to the Joint Committee (following page). A separate issue form is required for each issue submitted. Issue papers include proposals for modification of a standard, information reports and (of current research, etc.). An issue paper shall be categorized as being for ACTION or for INFORMATION. Submitters should limit the Issue Paper to 1 or 2 pages – attachments detailing full recommendations or background information may be attached with supplementary information. The Chairperson of the appropriate Joint Committee will respond within 30 days of receipt of the issue document advising what steps will be taken. Any issue document intended for discussion at a Joint Committee meeting must be received at least 21 days prior to the meeting to ensure inclusion in the agenda.

Submit to:

NSF International
Attn: Standards Department
789 Dixboro Rd.
Ann Arbor, Michigan 48105

Fax: 734-827-6831
e-mail: standards@nsf.org

Submitter’s contact information:

Name: Jim Brady

Company: Wawa, Inc.

Mailing Address: 260 W. Baltimore Pike
City: Media State: PA Zip Code: 19063

Telephone Number: 609-220-1035 E-mail: jim.brady@wawa.com

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Signature of Submitter *Jim Brady* Date May 15

*Type written name will suffice as signature
Please insert a check (X) in the appropriate place to indicate if you wish the item to be considered as an action item or as an information item.

Action XXX Information ____________________

NSF Standard(s) Impacted:
Various Standards or just Standard 3 depending boilerplate vs. non-boilerplate outcome.

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

A referral was made to the Standard 2 Task Group from Mr. Tracy Schonrock regarding the term “penetration of vermin” in the materials section of Standard 3. Since the issue regarded boilerplate language, it became a Standard 2 issue. The thought is, as written, this term would prohibit the use of insulation type material because such materials could be penetrated by vermin. The thought was to remove the term “penetration of vermin” from the material section because 5.1.1 already dealt with the penetration of vermin from a design perspective. See Attachment 1 for initial submission.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

When posted for comment, the Standard 2 Task Group communicated two basic thoughts:
1) Favorable: 5.1.1 adequately addressed penetration of vermin, therefore the term could be removed from the materials section.
2) Opposing: Removing the term from the material section would compromise the standard.

Because the opposing views came from a wide range of members, i.e., manufacturer, end user and regulatory, no change to the material section was recommended. See Attachment 2 for a more detailed explanation of the comments received.

This recommendation was not satisfactory to the submitter.

A recommended rewording of the materials section of Standard 3 had been submitted with the original comments and was, with slight changes, acceptable to the submitter.

Since this was a change to Standard 3 only, the Standard 3 Task Group was solicited for comment. This resulted in an additional recommendation.
Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

**Standard 3 Recommendation #1 Submitted by Standard 2 Task Group and reworded by submitter.**

4 Materials

The requirements contained in this section are intended to ensure that the materials used in the manufacture of warewashing machines resist wear and penetration by vermin (insulation in sealed, non-food zone enclosures is exempt) and are unaffected by detergents, sanitizers, and other substances present in the intended use environment.

*Reason:* The change is being proposed to clarify the use of insulation in non-food zone enclosures is exempt from this requirement.

**Standard 3 Recommendation #2 Submitted by Standard 3 Task Group (Joel Hipp)**

The requirements contained in this section are intended to ensure that the materials used in the manufacture of warewashing machines resist wear and penetration by vermin and are unaffected by detergents, sanitizers, and other substances present in the intended use environment. Materials used in unexposed non-food zone areas shall be exempt from all requirements in 4.

*See Attachment 3 for a more detailed explanation for this recommendation.*
Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Attachment 1

Initial Comment Submission

Comment: The initial sentence of the section lists a series of requirements including the phrase "penetration by vermin." This appears to be a problematic criterion as equipment fabricating materials such as stainless steel, plastics and rubbers are inherently impervious. By including this requirement some materials, such as wood and insulation are effectively eliminated from use because of their nature could allow insect penetration. It seems impractical to design and fabricate a warewashing machine that cannot be insulated.

I acknowledge that the prevention of vermin penetration is necessary but the requirement is misplaced in the Material specification. Protection against vermin is a fabrication issue not a materials issue. In this standard, this need is more effectively dealt with in section 5.1.1.

Proposed solution: I recommend the phrase "penetration by vermin" be deleted from 4. Materials to assure that it is not interpreted to exclude the use of insulation materials. The current section 5.1.1 is sufficient to protect the overall design and fabrication to exclude vermin.
Attachment 2
“Vermin Penetration in Materials Section” Considerations and Recommendation

Background: The initial issue defines the term “penetration of vermin” in the materials section to mean that this statement would prohibit the use of insulation type materials because they could be penetrated by vermin. However, the argument goes on to state that penetration of vermin is a fabrication issue, not a materials issue and therefore is sufficiently covered in 5.1.1. In conclusion, deleting this term in the Materials section assures that where insulation is needed, materials needed to properly insulate would not be prohibited and that 5.1.1 addresses any vermin penetration concerns.

Opposing Arguments
1. When interpreting the materials and fabrication sections of the standard, there is a distinction being drawn between what is a material issue and what is a fabrication issue, therefore removing the term from the materials section unacceptably compromises and weakens the standard.

This argument appears to have merit because, contained within the initial issue statement is a contradiction that indicates the need to keep the statement in the Materials section. On the one hand, the concern is stated that insulation type materials would allow for vermin penetration, and on the other hand it is stated that vermin penetration is a fabrication issue, not a materials issue. If materials allow for the penetration of vermin, then materials are an issue above and beyond fabrication and design.

2. The conclusion that insulation is prohibited as worded is not valid. This would seem to be correct in that prohibiting insulation has never been raised as an issue in the past. Therefore the recommendation base on the argument that it prohibits insulation is not valid or necessary.

Favorable Argument
5.1.1 is all inclusive in its interpretation. (5.1.1: Equipment shall be designed and manufactured to prevent the harborage of vermin and ....) If particular types of material are used in a fashion that allow for penetration of vermin, then it does not meet the fabrication criteria in 5.1.1. In other words, if material types are used in an improper manner, it is interpreted as a fabrication issue, not a material issue. The issue becomes a matter of how 5.1.1 interpreted.

The problem with this reasoning is, based on opposing comments, 5.1.1 has not been interpreted in this fashion and would therefore cause confusion and is seen as compromising.

Conclusion: Based on the inconsistencies of the original issue as presented and the validity of the opposing arguments, the term “penetration of vermin” should remain in the Materials section of the Standard.
Mindy,

I looked at two other NSF International standards that include products that are commonly provided with insulation, 4 & 7. Both standards have a separate section addressing insulation. Section 4 of standard 7 does not have a disclaimer for insulation. Section 4 of standard 4 includes the statement, “Materials used in unexposed non-food zone areas shall be exempt from all requirements in 4”. I do not think a separate section for insulation is required in NSF 3.

I would not remove the phrase, “penetration by vermin” from section 4 of NSF 3 since it is consistent with other boiler plate language. Instead, I would consider adding the above statement to exempt materials in unexposed non-food zone areas from the requirements in section 4. I do not believe any third-party certification agency has had a concern about insulation in commercial dishwashers up to this point and I don’t believe there will be in the future. Thanks for the opportunity to comment.

Submitter Jim Brady Date May 15, 2008
Joint Committee Issue Document

NOTE: An issue document may be submitted at any time – it comprises two parts: the cover sheet (this page) and a description of the issue to be submitted to the Joint Committee (following page). A separate issue form is required for each issue submitted. Issue papers include proposals for modification of a standard, information reports and (of current research, etc.). An issue paper shall be categorized as being for ACTION or for INFORMATION. Submitters should limit the Issue Paper to 1 or 2 pages – attachments detailing full recommendations or background information may be attached with supplementary information. The Chairperson of the appropriate Joint Committee will respond within 30 days of receipt of the issue document advising what steps will be taken. Any issue document intended for discussion at a Joint Committee meeting must be received at least 21 days prior to the meeting to ensure inclusion in the agenda.

Submit to:

NSF International
Attn: Standards Department
789 Dixboro Rd.
Ann Arbor, Michigan 48105

Fax: 734-827-6831
e-mail: standards@nsf.org

Submitter’s contact information:

Name: Anthony J Gagliardi R. S.

Company: Forsyth County Health Department

Mailing Address: P O Box 686

City: Winston-Salem State: NC Zip Code: 27101-0686

Telephone Number: 336-703-3134 E-mail: gagliaj@forsyth.cc

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Signature of Submitter * Anthony J Gagliardi R. S. * Date May 8, 2008 
Type written name will suffice as signature
Please insert a check (X) in the appropriate place to indicate if you wish the item to be considered as an action item or as an information item.

Action __X_____________  Information ______________________

NSF Standard(s) Impacted: ANSI/NSF-2  Possibly ANSI/NSF-

Issue Statement:

When a walk in cooler/freezer is assembled and the resultant equipment is something that does not meet the Standards, the blame goes back and forth between the manufacturer and the person who assembled the unit as to whose fault this is.

Background:

I personally have had several challenges with this issue. When I come on the scene to look at an assembled cooler or freezer in a new facility, I have noted a variety of issues with the unit ranging from thickness of the panels not allowing the walls to set on the floor template properly on both sides, to a unit that just does not fit together well. When an opinion is issued about the box, the manufacturer will typically say that they have assembled the unit in the factory before it was shipped, therefore it must be the assembler’s problem. The assembler will say that the box is a piece of junk and cannot be assembled properly. The truth of the situation may lie somewhere in the middle and be the fault of both.

Recommendation:

If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

It is my opinion that for a unit to be listed, a person who has been trained by the manufacturer and certified to know how to assemble their equipment must assemble it. In this situation, when there is a problem, the manufacturer has a protocol as to how to deal with situation and the installer.

If this is not possible, then some other scheme needs to be in place to address this challenge.

Supplementary Materials (photographs, diagrams, reports, etc.):

See attached photos.

Submitter  Anthony J Gagliardi, R. S.  Date  May 8, 2008  .
Tab 3
Information Paper

NOTE: Information Papers can include: Task Group updates, news of events or activities related to the field of interest of the Joint Committee. Time permitting, these papers will be reviewed at the Joint Committee meeting. They must be received at least 21 days prior to the meeting to ensure inclusion in the agenda and distribution.

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Fax: 734-827-6831
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Contact information:

Name: Jim Brady

Company: Wawa, Inc.

Mailing Address: 260 West Baltimore Pike
City: Media  State: PA  Zip Code: 19063

Telephone Number: 610-358-6180  E-mail: jim.brady@wawa.com

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Signature of Submitter *Jim Brady*  Date 2/1/08

*Type written name will suffice as signature*
Subject:
(If the topic concerns a Task Group's activity or status, please identify the Task Group and the relevant NSF Standard. If the report involves an issue to be balloted or for which a decision of the Committee is need, an Issue Paper should be completed.)

Regarding the use of RTV sealants, In the February 2007 Joint Committee on Food Equipment Meeting, the following request was made (Excerpt from Meeting Minutes)

**Motion:** TG should request assistance from the regulatory group in gathering information on potential RTV issues with specific direct food contact equipment in the field usage. Based on the data gathered, a recommendation from the TG should be given to the JC. D. Neghandi moved; L. Howington seconded.

**Discussion:** TG would have eventually gotten to this point. JC should provide clearer direction.

**Vote:** K. Smith, B. Harrington, T. McNeil, T. Carotenuto - opposed.

**Motion passed.**

**Brief statement of information provided:**

1. Summary of Regulatory RTV Equipment Inspections *(Attachment 1)*
2. Detail of Regulatory RTV Equipment Inspections *(Attachment 1)*
   
   Compliments Ben R. Gale, Santa Clara CO., DEH
3. Methodology Submitted to Regulatory for Inspections *(Attachment 2)*
4. E-mail from Robert Harrington, Director, Casper-Natrona County Health Department *(Attachment 3)*

**Note:**

1. Based on the wording of the motion, RTV was left as an open issue
2. Digital pictures were not attained
3. Information attained would not seem to warrant a ban on RTV in the Food Zone.

Submitter **Jim Brady**

Date **2/1/08**
# Attachment 1
## Summary of Regulatory RTV Equipment Inspections

<table>
<thead>
<tr>
<th>Equipment Make Model</th>
<th>Years old/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ice Machine</strong> Hoskizaki American  F-650MA0</td>
<td>~7 yrs old in good condition</td>
</tr>
<tr>
<td><strong>Hot Holding Oven</strong> Royalton Rrh-6135-c4w</td>
<td>&gt;10 yrs old, screws that hold large vertical piece inside unit falls off</td>
</tr>
<tr>
<td><strong>Refrigerator (open face)</strong> Carrier Tyler unable to determine</td>
<td>Years unknown, light fixture on unit appears to be affecting cold holding temperatures on foods stored on the top 3-4 shelves</td>
</tr>
<tr>
<td><strong>Rethermalization Holding System</strong> Wittco Food Service Equipment rt-32-1-s-cor rt-32-1s-m</td>
<td>~3 yrs old, gasket on doors are broken</td>
</tr>
<tr>
<td><strong>Hot Holding Oven</strong> Royalton rrh-6135-c4w</td>
<td>Years unknown, Unit holds uneven cooking/holding temperatures. Trays are required to be rotated to prevent burning and even cooking temperatures</td>
</tr>
<tr>
<td><strong>Hot Holding Oven</strong> Royalton rrh-6135-c4w</td>
<td>Years unknown, Unit holds uneven cooking/holding temperatures. Trays are required to be rotated to prevent burning and even cooking temperatures</td>
</tr>
<tr>
<td><strong>Hot Holding Oven</strong> Royalton rrh-6135-c4w</td>
<td>Years unknown, Unit holds uneven cooking/holding temperatures. Trays are required to be rotated to prevent burning and even cooking temperatures</td>
</tr>
<tr>
<td><strong>Reach-In Freezer</strong> Continental  2F</td>
<td>Age of equipment unknown, bought business in 2002. door gaskets in satisfactory condition</td>
</tr>
<tr>
<td><strong>Refrigerated Preparation Unit</strong> TRUE TSSU-72-18</td>
<td>Age of equipment unknown, bought business in 2002. door gaskets and seals in satisfactory condition</td>
</tr>
<tr>
<td>Equipment</td>
<td>Make</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Hot Holding Unit</td>
<td>Classic</td>
</tr>
<tr>
<td>One-compartment Prep. Sink</td>
<td>GoldTech</td>
</tr>
<tr>
<td>Ice Machine</td>
<td>Manitowoc</td>
</tr>
<tr>
<td>Reach-In Refrigerator</td>
<td>Beverage-Air</td>
</tr>
<tr>
<td>Hot Holding Cabinet</td>
<td>Carter Hoffmann</td>
</tr>
<tr>
<td>Reach-In Refrigerator</td>
<td>Traulsen;</td>
</tr>
<tr>
<td>Retherm. Cabinet</td>
<td>Carter-Hoffmann</td>
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<tr>
<td>3-Compartment Sink</td>
<td>Lambertson</td>
</tr>
<tr>
<td>Convection Heated Cabinet</td>
<td>Bevles</td>
</tr>
<tr>
<td>Panini Grill</td>
<td>Star Pro-Max</td>
</tr>
<tr>
<td>Cooking Oven</td>
<td>Blodgett</td>
</tr>
<tr>
<td>Toaster Oven</td>
<td>Toastmaster</td>
</tr>
<tr>
<td>hot holding unit</td>
<td>CresCor</td>
</tr>
<tr>
<td>Stainless steel shelf at cooks line</td>
<td></td>
</tr>
<tr>
<td>Ice Machine/bin</td>
<td>Manitowoc</td>
</tr>
<tr>
<td>vegetables shredder and peeler</td>
<td>Robot Coupe</td>
</tr>
<tr>
<td>Ice cream scoop</td>
<td>Syscoware</td>
</tr>
<tr>
<td>Equipment</td>
<td>Make</td>
</tr>
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<td>---------------------------------------</td>
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</tr>
<tr>
<td><strong>Crescor</strong></td>
<td>H137UA9CD</td>
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<tr>
<td><strong>Two compartment food prep sink,</strong></td>
<td></td>
</tr>
<tr>
<td><strong>shred/chop/slicer</strong></td>
<td>Robot Coupe</td>
</tr>
<tr>
<td><strong>Ice machine/ice bin</strong></td>
<td>Manitowoc</td>
</tr>
<tr>
<td><strong>Ice machine/bin</strong></td>
<td>Hoshizaki</td>
</tr>
<tr>
<td><strong>Ice machine</strong></td>
<td>Ice-O-Matic</td>
</tr>
<tr>
<td><strong>Stainless steel food prep sink</strong></td>
<td></td>
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<tr>
<td><strong>Self Service Refrigerator</strong></td>
<td>True</td>
</tr>
<tr>
<td><strong>3 compartment sink</strong></td>
<td>Gemini</td>
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<tr>
<td><strong>Hot Holding Steam Drawer</strong></td>
<td>Wells</td>
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<tr>
<td><strong>Chip Warmer</strong></td>
<td>Wells</td>
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<tr>
<td><strong>Handsink (attached to refrig. unit)</strong></td>
<td>Randell</td>
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<tr>
<td><strong>Mixer</strong></td>
<td>Hobart</td>
</tr>
<tr>
<td><strong>Handsink (attached to refrig. unit)</strong></td>
<td>Randell</td>
</tr>
<tr>
<td><strong>Mixer</strong></td>
<td>Hobart</td>
</tr>
<tr>
<td>Equipment</td>
<td>Make</td>
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<td>-------------------------</td>
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<tr>
<td>Steamer</td>
<td>Cleveland Steamcraft Ultra</td>
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<td></td>
<td></td>
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<tr>
<td>Ice bin</td>
<td>Ice-O-matic Agion</td>
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<tr>
<td>Self Service Refrigerator</td>
<td>Structural Concepts</td>
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<td>Hot Holding Buffet Steam Table</td>
<td>Eagle Group</td>
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<td>Food Prep sink</td>
<td>Advanced Food Service Equipment</td>
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<td>Ice cream disher</td>
<td>Syscoware</td>
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<tr>
<td>Mixer</td>
<td>Univex</td>
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<tr>
<td>Ice bin</td>
<td>Hoshizaki America, Inc</td>
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<td>Hoshizaki</td>
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<tr>
<td>3 compartment sink</td>
<td>Wesfac Inc.</td>
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<tr>
<td>Food prep sink</td>
<td>Wesfac Inc</td>
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<tr>
<td>Freezer</td>
<td>Traulsen</td>
</tr>
<tr>
<td>2 door preparation unit</td>
<td>Beverage Air</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Beverage Sliding door unit</td>
<td>TRUE</td>
</tr>
<tr>
<td>Equipment</td>
<td>Make</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Open face self service unit</td>
<td>Hussman</td>
</tr>
<tr>
<td>3 compartment sink</td>
<td>Universal</td>
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<tr>
<td>Single door prep unit self serve</td>
<td>TRUE</td>
</tr>
<tr>
<td>Mixer</td>
<td>Hobart</td>
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<td>3 Door preparation unit</td>
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<td><strong>Ice Machine</strong></td>
<td><strong>Hoshizaki</strong></td>
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<td>Hot holding cabinet</td>
<td>Bevles</td>
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<tr>
<td>Chest refrigerator</td>
<td>Norlake</td>
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<tr>
<td>Hot holding cabinet</td>
<td>Cres-Cor Crown-X</td>
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<tr>
<td>Hot holding cabinet</td>
<td>Bevles</td>
</tr>
<tr>
<td>Freezer</td>
<td>Northland</td>
</tr>
</tbody>
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Attachment 2
Methodology Submitted to Regulatory to Conduct Inspections

RTV Issues by Equipment Type for Direct Food Contact Applications

Background: Various regulatory agencies have volunteered to gather field information on RTV direct food applications on equipment. In an effort to update NSF standards to address RTV applications, it is necessary to identify specific applications where RTV is an issue. Based on information gained from a manufacturer survey, this document is meant to:

1. Specify pieces of equipment where manufacturers indicated RTV is used on direct food contact areas.
2. Specify processes where manufacturers indicated RTV is used on direct food contact areas.
3. Provide pictures identifying examples of what each piece of equipment looks like noting that there are many other types and manufacturers of each equipment type.
4. Provide other information by equipment type that has come up over the past few years since this became a topic within the normal NSF standards development process.

Note:
1. This information should only be used as a guide when acquiring field information. The goal is to attain detailed pictures of specific food contact applications that are visually a problem.
2. Feedback does not have to be restricted to the listed equipment if direct food contact RTV sealant issues are prevalent in other equipment.
3. Installation issues are out of scope. Direct food contact design/application is what is needed.

Ice Cream Dishers

The only conceivable application would be between two different materials, i.e. plastic and metal.

Possible applications: Seal stainless to plastics, bedding compound
Sugar dispensers

Stated application: To seal a seam on a stainless steel hopper used in a sugar dispenser. The RTV is used to seal stainless to stainless and Polyethylene to stainless.

Other possible applications: Joints and Seams, gasket adherence, seal stainless to polyethylene, sealant, bedding compound

Information Paper.doc
Peelers, Commercial

Stated application: the Potato peeler - In the hopper, RTV seals a joint between a reinforcing plate and the hopper wall.

Other possible applications: Joints and Seams, gasket adherence, big pieces where it can't be bent or welded, sealant, bedding compound

Possible accessories: Drains

Note: Give special attention on hopper seals, seams, gaskets, joints and areas where two parent materials meet.
**Chip Warmers**
No specific applications were given.

**Possible applications:** Joints and Seams, gasket adherence, big pieces where it can't be bent or welded, seal stainless to polyethylene, sealant, prevent air leaks, bedding compound

**Possible accessories:** Thermometers, Baffles

*Note:* Give special attention on direct food contact areas where there are seals, seams, gaskets, joints and areas where two parent materials meet.
Agitators/Mixers/Blenders

Stated application: RTV used to provide a seal (bedding compound) between surfaces for our Mix Probes and Agitator Housing to our Product Mix Can.

Other possible applications: Joints and Seams, gasket adherence, seal stainless to polyethylene, sealant, bedding compound

Cook/Hold

Stated applications:
1. Cooking and holding oven cavities
2. Oven interior joints. Instead of welding, we use hemmed seams that are screwed together with RTV used in the seams to seal them.

Other possible applications: Joints and Seams, gasket, sealant adherence, Big pieces where it can't be bent or welded, prevent air leaks, bedding compound

Possible accessories: Thermometers, Baffles
Ice Bins

**Stated applications:**
1. Seams of ice storage bins where different material meet
2. Ice storage bin liners
3. Ice storage bins (the consumable product being ice).

**Other possible applications:** Joints and Seams, Joints and Seams, gasket adherence, sealant, bedding compound

**Possible accessories:** Drains, Thermometers, Baffles, big pieces where it can't be bent or welded

*Note: Ice bins were the original source of RTV direct food contact issues. Close attention should be made to any area where ice comes into contact with RTV.*
**Tanks-Generic**

**Stated application:** Food Zone; tank seams, top back and sides

**Other possible applications:** Joints and Seams, gasket adherence, big pieces where it can't be bent or welded, sealant, prevent air leaks, bedding compound

*Note: This could include any equipment that incorporates a tank in it. The other application could be larger commercial storage tanks:*
**Sinks**

**Stated application:** RTV = Room temperature Vulcanizing- Media= Silicone NSF approved. -Ex enclosed cabinets. ec-1840, tables, sinks, etc.

**Other possible applications:** Joints and Seams, Gasket adherence, sealant, prep area, bedding compound

**Possible accessories:** Side Splashes

*Note: This would include sinks specifically used for food products and may or may not be in the food service area. These would include deli and produce sinks.*
Cabinets-Generic

**Stated applications:**
1. In cabinet gables, under shelves, where they meet the side walls to fill in the crevice created by the radius on the sheet metal from bending.
2. RTV = Room temperature Vulcanizing- Media= Silicone NSF approved. -Ex enclosed cabinets. ec-1840, tables, sinks, etc.

**Other possible applications:** Joints and Seams, Gasket adherence, big pieces where it can't be bent or welded, seal stainless to polyethylene, sealant, prevent air leaks, bedding compound

**Possible accessories:** Thermometers, Baffles
This could include hot, cold or ambient cabinets whose intent allows for direct food contact.
**Coolers/Refrigerators**

**Stated applications:**
1. Side splashes, Drain Boards, Filer Boards, Blender Stations and *Food Service Coolers*
2. Refrigerator liner seams

**Other possible applications:** Joints and Seams, Gasket adherence, big pieces where it can't be bent or welded, seal stainless to polyethylene, sealant, between lineup, prevent air leaks, bedding compound

**Possible accessories:**
Drain/Filer Boards, Thermometers, Baffles
Countertops/Drop-ins

Stated applications:
1. Spine joint on the 36 inch work surface between two units in a line-up (Custom Counter)
2. Around drop in equipment on food zone counter tops.
3. Field joints on counter tops are commonly sealed using food grade silicone caulk. Since counter top surfaces are considered a food zone, food may come in contact with the sealant.

Other Possible applications: Joints and Seams, big pieces where it can't be bent or welded, sealant, between line up, prep area, prevent air leaks, bedding compound

Possible accessories:
Side Splashes, Drain/Filer Boards, Thermometers, Baffles
Attachment 3

E-mail from Robert Harrington,
Director, Casper-Natrona County Health Department

-----Original Message-----
From: Robert Harrington [mailto:rharrin@cnchd.org]
Sent: Monday, June 04, 2007 4:06 PM
To: Badman, Lorna; Badman, Lorna
Subject: RTV

I'm afraid that I have no particular report from the field on RTV

although our Sanitarians were requested to be on the lookout for worn or dilapidated RTV materials, they reported that they did not see any.

In a brief review of our records, we did find a few isolated references to refrigerator gaskets deteriorating, but for the most part we have concentrated on the critical issues of temperature control, personal hygiene, and cross-contamination.
Joint Committee Issue Document

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e-mail: standards@nsf.org

Submitter’s contact information:

Name: Kevin Smith

Company: FDA

Mailing Address: 5100 Paint Branch Pkwy

City: College Park State: MD Zip Code: 20740

Telephone Number: 3014362149 E-mail: Kevin.Smith@fda.hhs.gov

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Signature of Submitter * Kevin Smith ______________ Date __05/27/08__

*Type written name will suffice as signature
Please insert a check (X) in the appropriate place to indicate if you wish the item to be considered as an action item or as an information item.

Action _______________ Information _______x__________

NSF Standard(s) Impacted:

Issue Statement:

The Joint Committee previously deliberated on the hazards associated with the use of RTV sealants and at one point agreed that future versions of NSF Standards should prohibit their use in Food Zones. Since then no progress has been made in modifying the Standards accordingly.

Background:

When used on surfaces subject to significant changes in temperatures, abrasion or wear, excessive moisture, handling, or exposure to foods, RTV sealants may easily be damaged, degrade, loosen or separate from the surface to which it is applied. Such damage would render the sealant ineffective if intended to seal an area that may be otherwise trap debris or be difficult to clean deliver a desired effect. Such damage may create areas even more difficult to effectively clean. If the sealant is intended to provide an insulating effect or other function that may effect the performance of the equipment, then failure of the seal may negatively impact equipment performance. It is not reasonable to expect that retail food establishment operators will vigilantly evaluate seals made with RTV sealants and routinely apply new seals as needed. There are suitable alternatives for most sealant applications. If there are necessary exceptions, than those exceptions can be spelled out in the Standards.

Recommendation:

Modify existing NSF Standards to prohibit the use of RTV sealants on equipment surfaces in a food zone or splash zone that may be subject to significant changes in temperatures, abrasion or wear, excessive moisture, human handling, or exposure to foods, whether during use or cleaning of the equipment. The Joint Committee should consider reasonable exceptions to this rule when it can be shown that no alternative is available that delivers an equivalent level of sanitation.

Supplementary Materials (photographs, diagrams, reports, etc.):

Submitter ______Kevin Smith____________  Date __05/27/08________

Issue document.doc
Joint Committee Issue Document

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Signature of Submitter *___Janet Anderberg_/ Kevin Smith Date __05/27/08_

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Action _______ x _______     Information ____________________

NSF Standard(s) Impacted: NSF/ANSI 8

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

There are a number of issues related to the manufacture of deli slicers that require the attention the Joint Committee. The Joint Committee should revisit acceptable design and construction requirements for deli slicers in NSF/ANSI 8, especially for the interface between metal and plastic components (such as handles and guards). Slicers should be designed and constructed withstand repeated use and rigorous cleaning procedures without being rendered difficult to clean.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

Following a Salmonellosis outbreak in 2007 that was believed to be associated with a contaminated slicer, the Washington Department of Health conducted a small-scale field survey of meat slicers in food establishments and found that both slicer construction and cleanliness are common concerns. This research was conducted in collaboration with manufactures of meat slicers and with three different local health jurisdictions. The survey found that many slicers were inadequately maintained and that the food contact surfaces and the non-food contact parts of the equipment had deteriorated such that they could not be easily cleaned. Common problems included broken or cracked handles and plastic pieces, missing screws and degraded or missing silicone seals. There were even some food scraps that had calcified to the point where regular cleaning would not remove it.

In the slicer believed to be associated with the 2007 Salmonellosis outbreak, gaps in a damaged silicone seal between a slicer handle and the carriage allowed meat scraps and moisture to accumulate under the handle and drain contamination onto the food that was being sliced (see photo). A cursory examination might not uncover this problem unless the screws holding the handle in place were removed.
Slicer contaminated with Salmonella (Note the broken silicone seal)

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

1. The NSF Joint Committee on Food Equipment should take action to improve the design of commercial deli slicers. NSF/ANSI 8 should be revised so as to preclude flaws in the design of deli slicers that make them difficult to clean and maintain after a period of use. Modifications should include:

- Changing 5.34.4 that excludes gripping and stacking devices from the radius requirements and the joints and seams requirements of the Standard;

- Prohibiting the attachment of components in manner that creates joints and seams in areas that must be handled by the user when operating the equipment;

- Prohibiting the use of sealants on components that maybe subject to mechanical warewashing or that are intended to be submerged or heavily wetted during cleaning and sanitizing;

- Requiring that the slicers be evaluated on their ability to be cleaned and sanitized according to manufacturers instructions in manner similar to the evaluation of equipment intended for in-place cleaning; and
• Requiring that the manufacture provide specific instructions on the removal and replacement of components in the food and splash zone that may become separated, damaged or misshaped after repeated use and cleaning.

2. NSF and the Joint Committee on Food Equipment should consider ways it can assist in informing users about potential concerns with existing designs and what can be done to correct problems that may exist.

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

See attached poster by Chester et al.

Submitter _____Kevin Smith___________ Date: 5/27/08
A Small Outbreak with Large Implications:  
An Outbreak of *Salmonella* 

Senftenberg Associated with a Fast-Food Restaurant 
E Chester¹, J Anderberg¹, J Dawson², G Campbell³, 
JK MacDonald¹  
¹Washington State Department of Health, ²Washington State Region 7, ³Grant County Health District

**Background**

• Late June 2007: 3 reports of PFGE matching *Salmonella* Senftenberg isolates from Grant County, mostly from Moses Lake residents

• 2 previous matching isolates from same county in February and April

• County typically reports 5-10 salmonellosis cases each year

• Serotype Senftenberg rare in Washington

• Local source of infection suspected
Methods

• Case definition
  • Any Grant County resident with *Salmonella* Senftenberg isolated from stool or urine in 2007

• Epidemiologic investigation
  • Case interviews
    • Oregon shotgun questionnaire (first 6 cases)
    • Standardized, focused questionnaire (all cases)
    • One person conducted all interviews
  • Case finding
    • Provider alert
    • Press releases
  • Environmental Investigation (fast-food restaurants A and B)
    • Inspections
    • Food worker interviews with standardized questionnaire
    • Food worker stool cultures
    • Environmental swabs
    • Focused outbreak investigation (Restaurant A only)
      • In depth review of processes, staff, and equipment
Results – Epidemiologic

- Epidemiologic
  - 13 community cases
    - 8 reported some association with Restaurant A
      - 2 definitely ate there during exposure period
    - 6 reported some association with Restaurant B
      - 2 definitely ate there during exposure period
  - 4 food worker cases
    - Employees of Restaurant A
      - All reported eating at work

Epidemic curve
Results – Environmental

• Restaurant B
  • Many food safety concerns found on initial investigation
    • Lack of hand washing after touching raw meat, lack of sanitizing surfaces in contact with raw meat, improper hot holding
  • All food worker stool samples negative (6/18 employees tested)
  • All environmental swabs negative (12 areas tested)

• Restaurant A
  • Generally clean but some food safety concerns on initial investigation
    • Main hand washing sink for employees blocked and inadequate hot holding
  • 22/22 employees interviewed and submitted stool samples
    • 5 reported recent GI illness (nausea, vomiting, or diarrhea)
    • 4 positive for outbreak strain (2 with diarrhea, 2 asymptomatic)
  • Meat slicer positive for outbreak strain
    • 8 areas of kitchen swabbed
    • Retesting of slicer after multiple rounds of cleaning and sanitizing yielded the outbreak strain in 3 of 4 samples
      • Blade and guard tested negative
      • Handles, meat press, and area exposed by unscrewing plastic plates (which attach the handles to the slicer carriage) tested positive
    • Space between plastic and metal was supposed to be sealed with silicone to keep out debris but silicone was degraded
      • Black residue between handles and carriage tested positive for outbreak strain
The contaminated meat slicer after the first sampling but before the second sampling

A generic slicer showing the carriage with handles intact while the carriage is off

A generic slicer showing the position of removed handles on the carriage when the slicer is assembled

Unscrewing the plates on the slicer revealed debris and degraded silicone

Debris on the slicer where the handles are connected with screws

Degraded silicone
Control Measures

• Contaminated slicer removed from service
• Restaurant closed for professional steam cleaning
• Employees excluded until negative stool culture result obtained
• Exclusion enforced by withholding food worker cards
• Positive workers needed two negative cultures to return to work
• Equipment sanitizing and hand washing logs
• Scheduled glove changes and more frequent slicer sanitization
• Personal health assessment of each employee with manager before every shift
• Switch to chlorine based sanitizer from quaternary ammonia
• Slicer professionally re-sealed
Discussion

• Source of *Salmonella* into Restaurant A unknown

• Symptomatic food worker, who was positive for the outbreak strain, assembled slicer each morning with bare hands

• Slicer only cleaned and sanitized once a day instead of every four hours as required by Washington Food Code

• Theory on role of slicer:
  • Gap that is formed when plastic and metal parts meet is initially sealed with silicone
  • Silicone degrades allowing meat scraps, oil, and debris to accumulate, forming a black residue
    • Degradation of silicone possibly accelerated by overnight soaking in sanitizer, constant exposure to heat lamps, intensive use, age of slicer
  • Pathogens introduced into residue form a biofilm resistant to cleaning procedures
    • Liquid seeps out of residue through gaps in silicone following cleaning procedures for at least several hours
    • Heat lamps over slicer used to keep meat warm provide environment conducive to bacterial growth
Implications

- Department of Health food safety personnel investigated slicer conditions at other locations of Restaurant A and at other establishments to determine if the silicone degradation problem is common
- Condition of slicers made by other manufacturers also investigated
- Silicone degradation problem is widespread, potentially affecting thousands of slicers in the United States
- Representatives from corporate Restaurant A and other national food safety partners have been made aware of the problem
- Some slicers in Washington have been replaced or repaired
  - Further assessment of slicers nationwide is necessary
- Some slicers are being redesigned to eliminate the silicone and allow for easy cleaning
- Areas that are not cleanable or visually obvious can be a source of contamination

Acknowledgements

- Thanks to Chas DeBolt, Dr. Alexander Brzezny, Peggy Grigg, Daniel Wilson, Todd Phillips, Amber McCoy, Jon Ness, Carol Schimke, Leah Allen, Kathy Lofy, Nisreen Kabeer, Public Health Laboratories personnel, and Cindy Burnett.
- This study was supported in part by an appointment to the Applied Epidemiology Fellowship Program administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement U60/CCU007177
Tab 4
Joint Committee Issue Document

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Action _______________ Information ______X__________

NSF Standard(s) Impacted: ANSI/NSF-2

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

Use of plastic liners in reach in coolers and freezers

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

In the 2005 JC meeting for Food Equipment, I brought up the issue of the possible inappropriate use of plastic liners in refrigerators and freezers. The issue was to be researched and brought back to the JC, but to date no progress has been made in this direction. What I am seeing is that these liners are cracking and separating with no clear reason as to why this is happening. When this happens, the insulation is exposed to food debris, liquids and would likely become a breeding ground for all sorts of things. To the best of my knowledge, there is no approvable way to repair this problem and thus a working refrigerator that might be in good repair otherwise, is now not acceptable for use. This causes a great deal of expense and anxiety for the consumer or end user and the Local Health Department.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

I think a decision of how to address this issue can only be made once the issue is thoroughly investigated.

Supplementary Materials (photographs, diagrams, reports, etc.): If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members. See attached photos.

Submitter Anthony J Gagliardi, R. S. Date 02-07-08
Joint Committee Issue Document

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e-mail: standards@nsf.org

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Signature of Submitter * Thomas Joseph McNeil Date 15 May 2008

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Action  __X____________     Information  ____________________

NSF Standard(s) Impacted: Standard 2

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

My concern is when a manufacturer’s literature and operating instructions include use of an “NSF listed” item in an unsafe or unsanitary manner.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

The specific item I have in mind is the InstaPrep Table. I am not questioning whether the InstaPrep Table should be listed. It comes apart and can be run thru a commercial dishwasher or a 3 compartment sink. The literature and instructions for use of the table says it is attached to a garbage can or bus tub. Some of the pictures show the trash can lined with a plastic bag. Others it is not. Nowhere does it state the can or bus tub must be clean and sanitized before use. See their web at www.Instaprep.com and the attached literature.

What would happen if the literature and manufacturer’s instruction for a cutting board showed being used by a worker who placed it on the sidewalk? (I've seen them used overseas that way overseas.); or if their literature showed another piece of equipment being used in an unsafe manner? NSF’s prominent logo on the literature, would seem to the user and endorsement of the methods shown at least on that page.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

Recommendation: The NSF listing and review that accompanies the listing of a product should include the literature, cleaning and sanitization and use instructions as well as sale brochures; especially the material which displays the NSF logo.

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

I will bring 50 copies

Submitter  Thomas J. McNeil  Date  15 May 2008

Issue document.doc
Tab 5
Joint Committee Issue Document

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Signature of Submitter * Kevin Rowley Date February 28, 2007

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NSF Standard(s) Impacted:

NSF/ANSI 3 – 2003, Commercial warewashing equipment

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

While the NSF/ANSI 3 – 2003, Section 6, Performance includes a performance test for food soil removal, the test does not accurately reflect end user conditions. Therefore, the Standard as it exists now allows some newer low water consumption dishmachines to meet Standard 3 specifications without achieving the level of cleaning ability that higher water consumption dishmachines have historically reached and which do leave soil and detergent residues in an end user environment.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

Since the relatively recent introduction of low water consumption dishmachines within the industry, we have become acutely aware of unprecedented cleaning results challenges that include food soil carryover and detergent carryover reported by a large number of customers. We believe that these results issues are directly related to the way that these low water machines operate. Based on typical end user practices and procedures in using dishmachines, significant amounts of detergent filming and spotting as well as food soil redeposition is being reported directly in connection with low water consumption dishmachines.

These poor results cause the end users to rewash ware and/or drain and fill the detergent tank more often, thereby defeating the claimed water and energy savings. Furthermore, any remaining food soils have the potential to pose a public health risk.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

The following should be added to section 6.1.1.2:

Issue document.doc
1. In addition to the existing protocol for applying food soils directly to the ware, establish a food soil load that would be introduced to the wash tank before testing and maintained during testing. This soil should consist of a mixture of starches and proteins that can be standardized and repeated using commonly found food items (i.e. canned tomato sauce, prepared pasta and cooked beef).

2. Establish a minimum standardized detergent concentration that would be introduced to the wash tank before testing and maintained during testing. This solution should consist of a basic mixture of common detergent raw materials (i.e. polyphosphates and sodium hydroxide) in a concentration level commonly used by an end user.

3. The test procedure should include multiple cycles using the same test ware in order to measure food soil redeposit.

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Signature of Submitter * Kevin Rowley  Date February 28, 2007
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Signature of Submitter * ____________________________ Date 04/24/2008

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NSF Standard(s) Impacted: NSF/ANSI 3

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.
Addition of test method 6.2.2.2 (bactriological swab test) to 6.2.1.2 hot water sanitizing test method.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.
This test is used for chemical sanitizing dishwashing machine to ensure a 5 log reduction of E.coli and is recognized as an effective method of maintaining the public health. It should therefore be an acceptable alternative to the Heat Unit Equivalent test for hot water sanitizing dishwashing machines.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.
On attached separate document.

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Submitter Dwayne Becknell  Date 04/24/2008
Recommendation:

6.2 Sanitization efficacy

6.2.1.4 Test method

a) Prior to the test, the sanitization portion of the machine shall be operated for at least one cycle to verify that the machine is operating in accordance with the manufacturer's minimum specifications.

b) A suspension of *E. coli* (ATCC #11229) in sterile phosphate buffer deionized water (SBDW) shall be prepared by washing four 24 h “French bottle” slants into 0.5 L of SBDW. This technique ensures that the suspension contains more than 1.0 x 10^6 colony forming units per mL (cfu/mL).

An aliquot of the suspension shall be aseptically removed. The density shall be determined via optical density. The dispersion and morphological characteristics of the challenge culture suspension shall be microscopically examined using Brightfield microscopy and differential staining (i.e., gram stain). A Brightfield microscope and a calibrated ocular micrometer shall be used to verify the size, shape and arrangement of the organisms. The bacteria present in the challenge suspension shall be confirmed to be singlet in arrangement and dispersed in a homogeneous manner.

c) Thirty-five Libbey #618 milk glasses (8 oz) or the equivalent shall be inoculated with the *E. coli* /SBDW suspension. Each glass shall be inoculated in succession, by filling the glass with the suspension and then pouring the contents into the next glass. The lip of each emptied glass shall be dipped 1 in (2.54 cm) into a container of the suspension.

d) The inoculated glasses shall be air-dried for 10 ± 2 min before the test run. The glasses shall be placed upside down in a standard 20 in × 20 in (50.8 cm x 50.8 cm) dishrack. The rack shall be delineated into sections as shown in figure 6.6.

NOTE – For rackless conveyor machine designs, the glasses shall be arranged directly on the conveyor in the same configuration shown in figure 6.6.

e) The glasses shall be run through the sanitizing rinse portion of the machine cycle under one of the conditions in the manufacturer’s specifications.

f) Immediately upon removal from the machine, each section of glasses shall be sampled by swabbing all interior surfaces of the five glasses with a single sterile cotton swab. The cotton swab shall be placed into a vial (containing 5 mL of sterile neutralizing buffer) corresponding to the section in which the glasses were placed. Samples shall be handled aseptically. Analysis shall be initiated within 15 min of sampling. If analysis cannot be performed within 15 min, the swabs shall be refrigerated at 4 ± 2°C (39 ± 2 °F) for a maximum of 24 h.

g) These procedures shall be repeated for two additional trials to make a total of 105 glasses in 21 sections. The swab samples shall be enumerated using the Violet Red Bile (VRB) agar pour plate method.

h) Positive control
Five of the inoculated glasses shall be randomly selected as positive controls. All interior surfaces of the five control glasses shall be swabbed with a single cotton swab after inoculation and the required drying period. The cotton swab shall be placed in a vial with 5 mL sterile neutralizing buffer and enumerated (cfu/mL) by the VRB agar pour plate method.

Negative control

Individual negative control samples shall be collected from a glass that has not been inoculated, the VRB agar, the swab, the SBDW, and the pipette used. Enumeration shall be by the VRB agar pour plate method.

![Figure 6.6 - Test pattern for the bacteriological swab test for hot water sanitizing dishwashing machines](image)

### 6.2.25 Acceptance criteria

For each of the 21 zones, R shall be greater than or equal to 5.0, where:

$$R = \log_{10} \left( \frac{N_f}{N_i} \right)$$

and

- $N_i = \text{Initial inoculum density (CFU/mL)}$
- $N_f = \text{The number of CFU/mL recovered in each section of each rack}$

If $N_f < 1$, the samples shall be considered acceptable.

NOTE – This pattern is for a standard (20 x 20 in [50.8 x 50.8 cm]) rack. Similar patterns shall be used for different sizes and configurations.
Tab 6
Joint Committee Issue Document

NOTE: An issue document may be submitted at any time – it comprises two parts: the cover sheet (this page) and a description of the issue to be submitted to the Joint Committee (following page). A separate issue form is required for each issue submitted. Issue papers include proposals for modification of a standard, information reports and (of current research, etc.). An issue paper shall be categorized as being for ACTION or for INFORMATION. Submitters should limit the Issue Paper to 1 or 2 pages – attachments detailing full recommendations or background information may be attached with supplementary information. The Chairperson of the appropriate Joint Committee will respond within 30 days of receipt of the issue document advising what steps will be taken. Any issue document intended for discussion at a Joint Committee meeting must be received at least 21 days prior to the meeting to ensure inclusion in the agenda.

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Submitter’s contact information:

Name: __________ Mike Kohler ______________
Company: _______ NSF International
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Signature of Submitter * Mike Kohler Date __5/13/08__

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Action  ____X_________  Information  ____________________

NSF Standard(s) Impacted:  NSF/ANSI 4

Issue Statement:
Requirements for drains in steam tables and bains-marie units found in section 5.43 need to be clarified. The requirements were unintentionally changed in 1999.

Background:
The 1997 edition of Standard 4 was changed from the following to what it reads today. The reason provided for the change in the draft standard for the 1999 edition was “clarification of intent”. Not only did this change not clarify anything, it actually changed the requirements, which was not documented as intentional at that time.

1997 Language:
DRAINS FOR STEAM TABLES AND BAINS MARIE (WET TYPE): Drains shall be required for water pans or bins which are not readily removable for drainage or cleaning. Drains for water pans shall be a minimum of 25 mm (1 in) IPS with either a valve or an overflow to control the water level. Water pans holding 4 L (1 gal) or less under use conditions will be acceptable without a drain. However, if a drain is provided, it shall be a minimum of 13 mm (½ in) IPS.

Recommendation:
5.43  Steam tables and bains-marie

5.43.1 To facilitate cleaning, steam table tops shall be readily removable, or the openings shall be sized and located to permit access for cleaning the interior.

5.43.2 Water pans/bins on wet-type steam tables and bains-marie shall be readily removable and/or portable, or shall have a drain. If provided on a pan/bin of 1.0 gal (4.0 L) capacity or greater, drains shall be at least 1.0 in (25 mm) Iron Pipe Size (IPS). If provided on a pan/bin of less than 1.0 gal (4.0 L) capacity, drains shall be at least ½ in (0.50 in, 13 mm) IPS.

5.43.2.1 Water pans/bins that are not readily removable and/or portable and have a recommended fill-level capacity of 1.0 gal (4.0 L) or more shall be equipped with a drain that is a minimum 1.0 in (25 mm) Iron Pipe Size (IPS).

5.43.2. Water pans/bins that are not readily removable and/or portable and have a recommended fill-level capacity less than 1.0 gal (4.0 L) may be acceptable without a drain, however, if a drain is provided, it shall be a minimum ½ in (0.50 in, 13 mm) IPS.

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Submitter  Mike Kohler  Date  05/14/08
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Signature of Submitter *Bizhan Pourkomailian Date 13 May 13, 2008

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Action  Yes  Information  

NSF Standard(s) Impacted:
NSF/ANSI 6-2002

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

Changing the dispensing lockout period from 42 days to beyond 60 days

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

Modern freezer dispensing equipment are capable of maintaining clean environment and product for longer than 60 days and hence can work continuously for extended periods without the need to disassemble and clean and sanitize.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

Recommend changing the 42 days lockout period to beyond 60 days

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Submitter Bizhan Pourkomailian  Date 13 May 2008
Tab 8
Joint Committee Issue Document

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Submitter’s contact information:

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City: Richfield State: WI Zip Code: 53076

Telephone Number: 262-628-7629 E-mail: goehmen@server-products.com

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Signature of Submitter Gerald F. Oehmen Date 8-27-07

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Issue document.doc
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Action  __X____________  Information  ________________

NSF Standard(s) Impacted:

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

Section 6.3.3 states “The compressor percentage run time shall not exceed 90% in self-contained units. We currently manufacture a self-contained unit that uses electronic refrigeration. It does not use a compressor.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

Server Products is very concerned about food safety. We believe that the Condiment Chiller Model CC P/N 86070 does comply to Standard 7. We feel it is a safer system and more consistent than using eutectic pack or ice. Our customers prefer not to have to worry about the time based and frequent changes of these types of systems.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

6.3.3 When applicable the compressor percentage run time shall not exceed 90% in self-contained units. We currently manufacture a self-contained unit that uses electronic refrigeration. It does not use a compressor.

Supplementary Materials (photographs, diagrams, reports, etc.): If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Submitter Gerald F. Oehmen  Date 8-27-07
Tab 9
Information Paper

NOTE: Information Papers can include: Task Group updates, news of events or activities related to the field of interest of the Joint Committee. Time permitting, these papers will be reviewed at the Joint Committee meeting. They must be received at least 21 days prior to the meeting to ensure inclusion in the agenda and distribution.

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Contact information:

Name: Mr. Giles F. Roberts

Company: Georgia Department of Human Resources – Public Health Division

Mailing Address: 2 Peachtree Street NW

City: Atlanta State: Georgia Zip Code: 30303

Telephone Number: 404-657-6534 E-mail: gfroberts@dhr.state.ga.us

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Signature Giles F. Roberts Date May 28, 2008

*Type written name will suffice as signature
Subject:
(If the topic concerns a Task Group's activity or status, please identify the Task Group and the
relevant NSF Standard. If the report involves an issue to be balloted or for which a decision of
the Committee is need, an Issue Paper should be completed.)

This subject of concern is the importation into the United States certain food
service equipment from overseas. Specifically, the Futura 120 Pasta Maker from
Italy. This machine bears the CE mark, but no information has been forthcoming
with regards to any third party evaluation or the applicable standards.

Brief statement of information provided:

The above named equipment has been reviewed by both our office and Retail
Food Specialist out of the Atlanta Southeast Region Office. It is our conclusion
that the Futura 120 Pasta Maker can only be cleaned by wet cleaning
methodology namely pressure cleaning and sanitization. This is true since a
central roller part cannot be removed for ease of cleaning and sanitization, hence
the “in place” wet cleaning methodology is required.

Our questions are as follows:

Does pressure washing cleaning and pressure sanitization of equipment that
requires “In Place” cleaning and sanitization of food contact surfaces of
equipment fall within NSF Standard #8? If not, is Standard # 8 or some other
Standard being considered for such equipment? Are there any considerations by
NSF for reciprocity with Standards of organizations governing food service
equipment manufactured with countries outside the United States?

We do not have any recommendations do make, only to impart some information
that is now becoming more of a problem and can only expected to become more
of a problem in the future for our State and others attempting to evaluate
equipment coming from outside the United States. This is important because the
FDA is recommending through their Model Food Code that States adopt
regulations to look to ANSI Certification Programs to certify that food service
equipment meets Code requirements.

Signature ________________________________ Date  May, 28. 2008
Tab 10
Joint Committee Issue Document

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Submitter’s contact information:

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City: New York State: NY Zip Code: 10020

Telephone Number: 212-957-9330 E-mail: gabbott@idcdispensing.com

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Signature of Submitter * Greg Abbott Date Nov. 16, 2007

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Action ______X_______ Information ________________

NSF Standard(s) Impacted:

Issue Statement:
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

Technology has been commercialized to now dispense aseptically packaged non-refrigerated liquids from a flexible, collapsible container using a certified aseptic dispensing tap that does not break the sterility of the package contents, even is the liquid is being dispensed.

Background:
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

An aseptic dispensing tap is currently used to dispense high or low-acid aseptically processed products without breaking sterility after multiple uses over an extended period of time under ambient conditions of storage and dispense. This technology addresses NSF/ANSI Standard 18 – 2007, Section 6.4 and the suggested changes to this Standard are submitted under Recommendation.

Recommendation:
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

Please see attached (Attachment 1).

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Please see attached (Attachment 2).

Submitter _____ Greg Abbott _________ Date __Nov. 16, 2007__
6 Performance

6.4 Dispensing equipment without temperature controlled storage of potentially hazardous food or beverages

The requirements in 6.4 apply only to dispensing equipment that is equipped to:

a) accommodate specially-designed, single use, collapsible containers of aseptically processed and packaged potentially hazardous food or beverage in a homogeneous, liquid form; and

b) apply a mechanical barrier to maintain the commercial sterility of the food or beverage in the container while it is held without temperature control within the dispensing equipment; and

c) mechanically open the aseptic packaging in a sanitary manner while the product container is inside the dispensing equipment; and

d) maintain the function of the mechanical barrier either by
   a. means of an automated control mechanism that is factory adjusted to assure proper closure between product dispenses and under all conditions of equipment and material tolerances; or
   b. means of an aseptic dispensing tap permanently attached to a disposable, collapsible, single-use package;

   e) prevents dispensing of product if the mechanical barrier does not function as intended.

6.4.4.2 Acceptance criteria

The mechanical barrier shall close automatically when the power is interrupted or, upon restoration of power, a visual indicator shall be activated and the dispenser shall not dispense product until the existing container is removed and a new product container is installed, unless the container is equipped with a certified aseptic dispensing tap and the package is still within its appropriate use life.
Research Note

Sterility Testing of a Dispensing Valve for Aseptic Function in Food Service Applications

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MS 07-344: Received 2 July 2007/Accepted 23 August 2007

ABSTRACT

Manual dispensing equipment for aseptically packaged beverages or foods requires refrigeration of the product package following breakage of the hermetic seal. The food service industry would benefit greatly by implementing dispensing equipment that maintains the sterility of products after continued use without the need for refrigeration. The purpose of this study was to evaluate the ability of a valve, designed to operate aseptically and dispense products with or without refrigeration, to maintain the sterility of products following breakage of the hermetic seal and continued use simulating that of food service. Plastic packages equipped with the “aseptic” dispensing valve in a bag-in-box (BIB) format were aseptically filled with enrichment media with and without the addition of 1% cornstarch to simulate high- and low-viscosity products, respectively. BIBs filled with media were left uninoculated or inoculated (10⁴ CFU/ml) with Staphylococcus aureus or Aspergillus niger on the interior of the spout 1 cm from the opening to simulate consumer misuse. Uninoculated and inoculated BIBs were stored at 25°C, and media were dispensed once to twice per day, every day for up to 30 days to simulate food service use. Dispensates were observed for turbidity (compared with controls) indicating growth in BIBs and, thus, breach of sterility. Growth of samples taken aseptically through the package wall was checked microbiologically every 5 days by standard plating techniques. There was no breach in sterility until day 25. At day 25, uninoculated BIB (1 of 45 samples positive for growth) containing high-viscosity media and BIB inoculated with S. aureus (1 of 45 samples positive for growth) containing low-viscosity media became turbid. Viscosity and type of organism did not appear to influence the ability of the valve to maintain the sterility for ≥20 days. The results of this study provide evidence that the dispensing valve tested can maintain the sterility of aseptically filled products following initial dispensation and continued use under unrefrigerated conditions.

The food and beverage industries constantly strive to introduce new products and packages to grow market share in a highly competitive environment. One of the package platforms now gaining significant popularity is bag in box (BIB), which has been a successful package for many years for retail wine and food service dispensing because it can dispense ready-to-use liquids and has efficient flow as the inner bag collapses around the product during dispensing. The BIB package platform is beginning to find a niche in other retail and food service products, especially those aseptically prepared to maintain product integrity and quality.

The food service industry will have excellent success expanding their product ranges into BIB package platform and benefit greatly by implementing manual dispensing equipment that maintains the sterility of products after continued use without the need for refrigeration. The major food safety concern associated with manual dispensing equipment is the ability of the spout on the dispensing tap to become contaminated with pathogens. Many human pathogens associated with food processing and handling environments, including Listeria monocytogenes and Staphylococcus aureus, have the ability to attach to equipment surfaces (1, 4, 5). Colonization of dispensing equipment surfaces by pathogens that may form biofilms and eventually translocate from the exterior to the interior of the nutrient-rich package can result in a public health hazard. Traditionally, BIB packages equipped with valves have required refrigeration following the initial dispensation because the design of the valves did not “reseal” following actuation. According to National Sanitation Federation/American National Standards Institute Standards 18 (manual food and beverage dispensing equipment) and 20 (commercial bulk milk dispensing equipment), once a manual dispensing equipment has been actuated, the hermetic seal is broken, and the product is no longer considered aseptic and should thus be refrigerated to control the growth of microorganisms. Although refrigeration retards, if not prevents, most pathogenic organisms from growing, pathogens such as the ubiquitous L. monocytogenes are able to grow under refrigeration temperatures and can cause serious human illness and even result in death (3). For this reason, there is a need for a valve that can reseal following dispensation to form a hermetic seal that provides a barrier between the outside environment and the package contents, regardless of whether or not the package is refrigerated. Currently, there is only one valve on the market that has

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been designed to maintain the hermetic seal between the inside of the bag and the environment on the outside of the valve disc following continuous actuations (2).

The objective of this study was to evaluate the ability of a valve, designed to operate aseptically and dispense products with or without refrigeration, to maintain the sterility of products during continuous operation.

**MATERIALS AND METHODS**

Strains examined and preparation of inocula. *S. aureus* (ATCC 6538) and *Aspergillus niger* (ATCC 16404) were used to generate inocula. Strains were available as frozen (~80°C) stock cultures in tryptic soy broth (Difco, Becton Dickinson, Sparks, Md.) with 20% glycerol and were activated by inoculating *S. aureus* in tryptic soy broth and *A. niger* in Sabouraud dextrose broth (Difco, Becton Dickinson) and incubating at 35 ± 2°C for 72 h. Cultures were then streaked on tryptic soy agar with 5% blood agar (TSA II 5% SB; Difco, Becton Dickinson) and incubated at 35 ± 2°C for 48 h. Colonies from each organism were suspended in phosphate-buffered saline (pH 7.4; 0.2 g of KH2PO4, 1.5 g of Na2HPO4, 7H2O, 8.0 g of NaCl, and 0.2 g of KCl in 1 liter of distilled water) to yield a suspension concentration of approximately 10⁸ cells per ml.

Preparation of enrichment media. Growth-promoting media were selected for use in this study to simulate nutrient-rich food products. Tryptic soy broth was prepared for inclusion in packages containing valves destined to be inoculated with *S. aureus*. Sabouraud dextrose broth was prepared for inclusion in packages containing valves destined to be inoculated with *A. niger*. Each medium was formulated with or without the addition of 1% cornstarch to generate high- or low-viscosity media, respectively.

Aseptic filling of packages. Plastic packages (50 by 36 cm; DuPont Liquid Packaging Systems, Liqui-Box Division, Sacramento, Calif.) were fitted with preassembled aseptic dispensing valves (The Answer, International Dispensing Corporation, New York, N.Y.) and sterilized via gamma radiation with a target dosage of 35 to 45 kGy (cobalt-based gamma radiation; Steris Iso- medix, Libertyville, Ill.). Construction of the aseptic dispensing valve included a hermetic seal around the actuator button and spout opening. The valve disc inside the body of the dispensing tap separating the interior of the package and the exterior of the valve was designed by International Dispensing Corporation to form and maintain a hermetic seal. The sterilized packages were sent through an aseptic filling machine (Liqui-Box model 2000 CIT-0-A, Liqui-Box, Worthington, Ohio). Inside the sterile aseptic chamber of the machine, the aseptic BIB filler is designed to remove the valve from the spout of the bag so that the product can be filled through the spout. Because part of the outside of the bag was exposed in the sterile filling environment, the filler resterilized the part to be exposed with hydrogen peroxide (35%) as a wet mixture. Following sterilization, the valves were automatically removed in the sterile environment of the machine, the bags were aseptically filled with 5.7 liters of enrichment media, and the valves were reapplied into the “fully seated” position, ensuring that they could not be removed again without destroying the package. The filled and sealed packages were then ejected from the sterile chamber to be loaded into the outer container. Following filling, individual bags containing enrichment media were inserted into dispensing boxes (18 by 18 by 25 cm; Inland Container, Indianapolis, Ind.) to generate the BIB packages. Forty-five BIB packages were set up for each test variable (inoculum × viscosity).

Inoculation of valves. The concentrated cell suspension for each organism was used to generate an inoculum for the study. A range of serial dilutions was prepared from the original cell suspensions by sequentially transferring 1 ml into sterile 0.1% buffered peptone water (Fisher Scientific, Houston, Tex.) to yield a cell suspension of approximately 10⁴ CFU/ml for each organism. Final suspensions for *S. aureus* and *A. niger* were plated onto aerobic plate count Petrifilm (3M, St. Paul, Minn.) and yeast and mold count Petrifilm (3M), respectively, and incubated at 35 ± 2°C for 24 to 72 h for confirmation of culture concentration. Prior to inoculation, the hermetic seal covering the opening of the spout on each BIB package was removed to expose the spout opening. BIB packages containing tryptic soy broth were left uninoculated or inoculated by premoistening a sterile cotton swab with the diluted (10⁴ CFU/ml) *S. aureus* cell suspension and swabbing an internal surface (25 mm²) of the spout nozzle approximately 1 cm from the spout opening (Fig. 1). BIB packages containing Sabouraud dextrose broth were left uninoculated or inoculated by premoistening a sterile cotton swab with the diluted (10⁴ CFU/ml) *A. niger* cell suspension and swabbing the internal surface of the spout nozzle approximately 1 cm from the spout opening (Fig. 1). BIB packages were incubated at 25 ± 2°C for 24 h to allow attachment of the inoculated organisms. The level of microbial attachment was determined by swabbing the inoculation spot (25 mm²) with a premoistened sterile cotton swab after the 24-h incubation and after the first breach in sterility on additional BIB packages not used for dispensing. The premoistened sterile cotton swab used to swab the inoculation spot was suspended in buffer peptone water and plated onto aerobic plate count Petrifilm and yeast and mold count Petrifilm for *S. aureus* and *A. niger*, respectively, and incubated at 35 ± 2°C for 24 to 72 h.

Storage and dispensing from packages. Uninoculated and inoculated BIBs were stored at 25 ± 2°C for up to 30 days. Medium was dispensed (approximately 30 ml per dispensate) from
each BIB twice per day (with five actuations each time) for the first 10 days, after which time media were dispensed once per day for the remaining 20 days. Medium was dispensed to simulate typical food service use and to test the performance of the valve to maintain the sterility of the media inside the packages. Disparates were observed for turbidity that would indicate growth in BIB and, thus, breach of sterility. Sterile enrichment media were used as negative controls, and inoculated enrichment media (S. aureus in tryptic soy broth and A. niger in Sabouraud dextrose broth) were used as positive controls for visual comparison of dispense turbidity.

**Microbiological analysis.** Presence or absence of organisms in the enrichment media was checked microbiologically every 5 days by standard plating techniques. A volume (5 ml) of enrichment media was retrieved from the bags in each test case (inoculum × viscosity) by applying silicon gel (clear RTV silicone adhesive sealant; ITW Permatex, Inc., Solon, Ohio) to the bag, sanitizing the exterior surface of the bag (including the silicone gel) with 70% ethanol (Fisher), and inserting a sterile syringe (10-ml syringe, LuerLok, Difco, Becton Dickinson and 25-gauge 1½ PrecisionGlide needle, Difco, Becton Dickinson) through the gel to draw liquid from the interior. Media retrieved from BIBs containing tryptic soy broth were subsequently plated onto aerobic plate count Petrifilm (3M) and incubated at 35 ± 2°C for 24 h, while media from BIBs containing Sabouraud dextrose broth were plated onto yeast and mold count Petrifilm (3M) and incubated at 35 ± 2°C for 48 h. Following incubation, plates were observed, and the presence of colonies indicated internalization of organisms (a breach in sterility).

**RESULTS AND DISCUSSION**

The study was conducted to simulate realistic food service use (unincubated taps) and operator misuse (spout nozzles inoculated with 10⁴ CFU/ml) of an aseptic dispensing valve on BIB packages containing growth-promoting media (to represent nutrient-rich product) to test the ability of the valve design to prevent microorganisms from entering the sterile contents of the bag. S. aureus was selected for inoculation to represent a bacterium likely to contact the tap, because this organism is intimately associated with human skin, whereas A. niger was selected to represent a common environmental mold. The level of S. aureus (inoculated at 6.8 × 10³ CFU/ml) cells attached to the plastic spout nozzle was 8.0 × 10¹ CFU/25 mm². The level of A. niger (inoculated at 6.2 × 10³ CFU/ml) attached to the plastic spout nozzle was 1.8 × 10¹ CFU/25 mm². The results indicated that both organisms attached effectively to the interior surface of the plastic spout nozzle. By day 25 when the first breach in sterility was detected, the level of S. aureus attached to the plastic was 4.0 × 10¹ CFU/25 mm², whereas that of A. niger was 1.1 × 10¹ CFU/25 mm². The results indicated that both organisms survived and successfully colonized the interior surface of the plastic spout nozzle, most likely because of the nourishment from the residual growth-promoting media on the interior surface of the spout nozzle. It should be noted that the BIB packages inoculated with A. niger formed a visual cluster of black spores (observed by day 5) that appeared to spread within the interior of the spout nozzle, yet packages inoculated with this organism did not experience a breach in sterility up to day 30.

For purposes of this study, media (simulating nutrient-rich products) were formulated with or without 1% cornstarch to simulate high- and low-viscosity liquid products, respectively. The consistency of the high-viscosity media in this study represented products such as creamers, thick juices (i.e., orange), iced coffee and milk-based drinks, and coffee or tea with creamer, whereas the consistency of the low-viscosity media represented coffee or tea without creamer, clear juices (i.e., apple), water, liquors (i.e., wine), and thin broths or soups. These are the product categories that would most likely be used in the BIB format with the aseptic valve, and as such, the media were formulated to mimic these products. Overall, the viscosity and type of organism did not appear to affect the ability of the valve to maintain the sterility of the product; that is, there was no breach in sterility of any of the BIB packages (0 of 360 [45 bags × 2 viscosities × 4 inoculum schemes]) by day 20. There was no breach in sterility until day 25. By day 25, uninoculated BIB (1 of 45) containing high-viscosity media and BIB (1 of 45) containing low-viscosity media and inoculated with S. aureus experienced a breach in sterility. The rationale for studying differing viscosities was that BIBs containing thicker products would pose a greater risk of microorganisms entering the bag, because the product might interfere with the ability of the valve to close properly and form a hermetic seal as designed. Furthermore, thicker products would more likely form a film of product residue on the interior plastic surface and allow microorganisms to spread. There was no trend suggesting that the high-viscosity product used in this study resulted in a higher likelihood of microorganisms entering the packages. Indeed, the results seemed sporadic and unexplained in that an uninoculated package became contaminated by day 25. The result suggests that there is a “use-life” of the aseptic dispensing valve, after which the risk of the product inside the BIB package becoming contaminated with microorganisms increases. The use-life is proposed as the time that the aseptic dispensing valve is validated to maintain the sterility of high-risk products (nutrient-rich products), which, in this case, appears to be 20 days. The test is considered a conservative, worst-case scenario, because the liquid used for the study was growth-promoting media that would have nourished organisms on the interior surface of the plastic, whereas actual products intended for use with the aseptic dispensing valve, such as coffee, tea, water, and juices, would be less effective in supporting survival and growth of microorganisms on the plastic surface.

The concept of aseptic dispensing without refrigeration is relatively new, and there are inherent concerns regarding public health, because any microorganisms entering the sterile product in the bag would not be temperature controlled and would be able to proliferate, provided the intrinsic properties (water activity, pH, etc.) and nutrient content of the product supported microbial growth. There is particular concern with potential hazards associated with spore-forming pathogens, specifically toxins of nonproteolytic and proteolytic *Clostridium botulinum*. These spore-forming bacteria are able to grow in low-acid (pH > 4.6) foods, and control of these organisms is usually afforded...
by refrigeration of the product; however, in nonproteolytic strains, refrigeration is insufficient to prevent germination of the spores. For this reason, it is essential that facilities that process and pack such products incorporate validated control measures that will ensure that spore-forming bacteria do not grow and produce toxins should the product, as offered for sale by the processor, be kept unrefrigerated in distribution or by consumers. There is a need to highlight the fact that the industry currently uses dispensing valves (not designed to function aseptically) on BIB packages that require refrigeration following initial actuation. The requirement for refrigeration of BIB packages with nonaseptic dispensing valves (National Sanitation Federation Standards 18 and 20) accepts that microorganisms may be internalized and rationalizes that refrigeration inhibits growth of microorganisms; however, this is not a control strategy for psychrotrophic organisms, especially pathogens such as L. monocytogenes or the nonproteolytic strains of C. botulinum. There is thus a need for technology that prevents microorganisms from entering BIB packages rather than attempting to minimize or inhibit the growth of organisms that may enter such packages. The design of an aseptic dispensing valve that reseals by forming a hermetic seal following multiple actuations provides a solution for manual dispensing equipment that may be used with or without refrigeration. Results of this study provide evidence that an aseptic dispensing valve is able to maintain the sterility of the product in BIB packages subjected to realistic food service and operator misuse scenarios without refrigeration for 20 days.

There are two primary mechanisms preventing microorganisms from entering BIB packages fitted with aseptic dispensing valves: (i) the design of the valve disc is such that release of the actuator following dispensing allows the silicone disc to form a hermetic seal with the plastic valve body and (ii) the positive pressure of liquid caused by the bag collapsing around the product as it dispenses prevents liquid from flowing back into the bag. The design of the check valve of International Dispensing Corporation’s The Answer tap (Fig. 1) incorporates a check valve that differentiates it from other taps, which are a spring-loaded cork valve design (a plastic plug forced into a tapered plastic cylinder), a modified ball valve (a threaded sleeve with a dispensing outlet), or a plug valve (usually a one-piece plastic molded part that relies on the “memory” of the plastic to shut off the product flow). The design of the check valve allows the product to be sealed against liquids but, most importantly, to clear away the liquid seal surface with every actuation, ensuring against possible wicking of the liquids. The maintenance of product sterility due to the function of the aseptic dispensing valve assumes the following: (i) the entire BIB package, including bag, spout, and dispensing tap, is constructed of plastic sufficient to withstand high doses of radiation; (ii) irradiation protocols ensure the minimum dosage penetration for the entire lot of packaging material treated; (iii) aseptic processing and filling follow strict sterilization protocols to ensure packages are filled aseptically; and (iv) hermetic seals are installed on the spout opening, around the actuator for the valve, and around the valve seal that separates the interior of the bag from the environment.

Under the conditions of this study, the viscosity of growth-promoting media mimicking products, such as coffee, tea, coffee or tea with creamer, creamers, juices, water, and broths, did not appear to influence the ability of the aseptic dispensing valve to maintain the sterility of the product within BIB packages. The ability of the aseptic dispensing valve to maintain the sterility of the product within BIB packages was not affected by inoculation of the spout nozzle with a bacterium (S. aureus) or a mold (A. niger) when compared with uninoculated controls following multiple actuations and storage at room temperature. In summary, the results of this study validate the ability of the aseptic dispensing valve to maintain the sterility of growth-promoting products in BIB packages following multiple actuations for 20 days without refrigeration under conditions simulating realistic use and operator misuse. Use of the aseptic dispensing valve provides the food service industry options to expand its product ranges while alleviating the need for refrigeration and also provides facilities that require the refrigeration of packages for organoleptic purposes or the option of a safer alternative to dispensing products.

REFERENCES
Tab 11
Joint Committee Issue Document

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Signature of Submitter *___Mike Kohler_______ Date ___05/13/08

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NSF Standard(s) Impacted: NSF/ANSI 51

**Issue Statement:**
Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

Section 6.2 of NSF/ANSI 51 requires clarification of intent and modifications in order to be consistent with table 6.3.

**Background:**
Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

The zone description given in table 6.3 for food zone testing indicates “food zone – direct contact”. Therefore it is only intended that these tests apply to food zones directly contacting food. Food zones not for direct contact have defaulted back to testing for splash zone applications. Prior to the 2002 edition of NSF/ANSI 51 the standard specified that “Organic coatings shall not be used in direct contact with food”. The only coating testing that existed at that time was for splash zone applications. When the standard was modified to add the new tests to allow coatings for direct food contact and serving and display ware (also direct food contact), the intent was to only eliminate the previous requirement that banned the use of organic coatings in direct contact with food. The changes were not intended to increase the testing requirements for food zones not in direct contact with food.

**Recommendation:**
If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of strike-out and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

6.2 Organic coatings

6.2.1 Food zones

6.2.1.1 Organic coatings may be used on food zone surfaces.

6.2.1.1.1 Organic coatings may not be used on food zone surfaces that are designed in purpose to be subject to cutting and chopping actions.

6.2.1.2 Coated surfaces used in direct food contact shall have substrate materials that conform to the requirements of 4.
6.2.1.3 Organic coatings used on food zone direct food contact surfaces shall meet the abrasion resistance requirements in 9.1.

6.2.1.4 Organic coatings used on food zone direct food contact surfaces shall meet the impact resistance requirements in 10.1.

6.2.1.4.1 The impact resistance requirements in 10.2 shall apply to organic coatings used on food zone direct food contact surfaces that are:

- internal to a unit, machine, or component;
- not subject to impact or wear by internal parts or mechanisms, or by operators;
- and
- not designed to be removed during routine cleaning or maintenance.

6.2.1.5 Organic coatings used on food zone direct food contact surfaces shall meet the heat resistance requirements in 11.

6.2.1.6 Organic coatings used on food zone direct food contact surfaces shall meet the adhesion requirements in 12.1.

6.2.1.7 Fluoropolymer coatings used on heated food zones and where expressly permitted under other NSF Food Equipment Standards shall be exempt from impact resistance, abrasion resistance, adhesion ability, and heat resistance performance tests.

6.2.1.8 Organic coatings used on food zone non-direct contact surfaces shall meet the requirements in 6.2.2.

6.2.2 Splash zones

6.2.2.1 Organic coatings may be used on splash zone surfaces.

6.2.2.2 Organic coatings used on splash zone surfaces shall meet the abrasion resistance requirements in 9.2.

6.2.2.3 Organic coatings used on splash zone surfaces shall meet the impact resistance requirements in 10.2.

6.2.2.4 Organic coatings used on heated splash zone surfaces shall meet the heat resistance requirements in 11.

- NOTE: Organic coatings used on corrosion resistant substrates in a splash zone shall be exempt from impact, abrasion, and heat resistance testing.

- NOTE: Organic coatings used on galvanized substrates in a non-direct contact food zone shall meet the requirements in 6.2.2.2, 6.2.2.3, and 6.2.2.4.

6.2.3 Serving and display ware

6.2.3.1 Organic coatings may be used on serving and display ware surfaces.

6.2.3.2 Organic coatings used on serving and display ware shall meet the abrasion resistance requirements in 9.3.

6.2.3.3 Organic coatings used on serving and display ware shall meet the impact resistance requirements in 10.2.
6.2.3.4 Organic coatings used on serving and display ware surfaces shall meet the adhesion requirements in 12.2.

6.2.3.5 Product literature shall be supplied by the manufacturer of coated serving and display ware expressly stating that the ware shall immediately be taken out of service and repaired or replaced if a fault in the coating occurs. The literature shall also state that the ware are not to be used for food preparation and are only for serving and display. The literature shall describe appropriate use environments, use limitations, and maintenance or care instructions. The literature shall also expressly state which utensil types are approved by the manufacturer for use on the ware.

6.2.3.6 Serving and display ware shall be marked (engraved, embossed, stamped, or otherwise) with the symbol “S” on the base of the equipment or surface or elsewhere when functionally or structurally necessary or where necessary for inspection. The marking shall be discernible and shall not adversely affect the cleanability, corrosion resistance, abrasion resistance, impact resistance, or heat resistance of the coating, or the adhesion of the coating to its substrate.

6.3 Performance requirements for coatings

See table chart below.

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<th>Coating type</th>
<th>Zone</th>
<th>Applicable performance test</th>
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<tr>
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<td>food zone – serving and display ware</td>
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<tr>
<td>metallic</td>
<td>splash zone</td>
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<tr>
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<tr>
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<td></td>
<td>10.1 impact resistance</td>
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<td>non-food zone</td>
<td>none</td>
</tr>
</tbody>
</table>

Supplementary Materials (photographs, diagrams, reports, etc.):
If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

Submitter Mike Kohler                 Date 5/13/08
Joint Committee Issue Document

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Signature of Submitter *Gary Coleman Date: May 27, 2008

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Action: X Information: □

NSF Standard(s) Impacted:
NSF/ANSI 51-2007

Issue Statement:

NSF/ANSI 51-2007, Section 5.2.2 specifically requires that storage shelving intended for wet environments and manufactured with metallic materials must pass corrosion resistance testing as outlined in Section 8 of that standard, unless that shelving is manufactured of stainless steel in the AISI 200 and 300 series of aluminum or of the alloy listed in Paragraphs 4.2.2.1 and 4.2.2.2, then it is exempt from corrosion testing.(Paragraph 5.2.2.1)

Paragraph 5.2.2.2 notes that storage shelving (for use in wet environments) must also meet other requirements set forth in the standard and specifically mentions Section 6 which contains coating requirements.

Section 8, Paragraph 8.1 requires that “A complete shelf sample shall be placed in a salt fog chamber.” The test method, as detailed in Section 8, does not describe what to do if the storage “shelf” is actually a storage “space”, that is organically coated and is formed as part of the integral design of the refrigeration unit's inner liner. An example of this “shelf” could be the bottom, the floor of the unit's liner that is under the bottom shelf and is sufficiently large to storage containers of food.

Background:
It is my understanding that corrosion resistance test was first added to the 1997 edition of NSF/ANSI 51 as a result of field complaints of corroded shelving and primarily in regard to knock down type shelving as found in walk-in refrigerators. Further, that the intent of the requirement was not intended to apply to the interior liner of the refrigerator itself. Additionally, 5.21.2 of NSF/ANSI 7 requires shelving to be readily removable and based on that requirement, the bottom of the interior liner should not be considered as a shelf.

Recommendation:
The definition of a "shelf" needs to be clarified so as to be able to more appropriately specify testing requirements.

Supplementary Materials (photographs, diagrams, reports, etc.):

Submitter: Gary Coleman, REHS Date: May 27, 2008
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Signature of Submitter * Michael Perez Date 14 April 2008

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NSF Standard(s) Impacted:  59

Issue Statement:
Section 5.46 covering refrigerated compartments is inconsistent with the format and text in boiler plate standards.

Background:
Since NSF/ANSI 59 is currently open for general revision, section 5.46 can be rewritten to match the format and text in boiler plate standards. There is no impact to public health.

Recommendation:
5.46 Mechanical refrigeration Refrigerated compartments

Rationale: This section covers both mechanically refrigerated and non-mechanically refrigerated compartments.

5.46.1 Mechanical refrigeration equipment, if provided, shall conform to the applicable design and construction requirements of NSF/ANSI 7, except that mechanical refrigeration on mobile food carts shall conform to the performance requirement of this Standard. Mechanical refrigeration on food kiosks shall conform to the performance requirements of NSF/ANSI 7.
Mechanically refrigerated storage compartments on mobile food carts shall:
- comply with the applicable design and construction requirements of NSF/ANSI 7; and
- comply with the performance requirements of 6.

5.46.2 Non-mechanically refrigerated storage compartments shall not be used on food kiosks.
Non-mechanically refrigerated storage compartments on mobile food carts shall meet the performance requirements of this Standard:
Non-mechanically refrigerated storage compartments on mobile food carts shall:
- comply with the applicable design and construction requirements of NSF/ANSI 2; and
- comply with the performance requirements of 6.

Rationale: Since this standard covers both mobile food carts and food kiosks, separating the requirements adds clarity. Design and construction requirements for non-refrigerated refrigerated compartments are missing from this draft.

5.46.3 Refrigerated storage compartments on food kiosks, if provided, shall be mechanically refrigerated and comply with the requirements of NSF/ANSI 7.

Rationale: Formatting the requirement in the positive matches the format in boiler plate standards.

Supplementary Materials (photographs, diagrams, reports, etc.):

Submitter Michael Perez  _____________  Date 14 April 2008 ___________
Tab 13
April 29, 2008

NSF International
789 Dixboro Road
Ann Arbor, Michigan 48105

Attention: Lorna Badman, Project Manager, Standards

Subject: Task Group Report – Warewash, Water Heaters & Dispensing Equipment

Dear Lorna,

The standing task group for NSF Standards 3, 5 and 29 had 3 issues to resolve since the last JC meeting on Food Equipment:

I. Boilerplate Language (3i7r1) – Added language to be consistent with NSF 2; no effect on design or performance criteria.
   A. One teleconference call to edit proposal.
   B. Issue was balloted with all affirmative and 3 editorial comments (Ben Gale, Steve Tackitt, Todd Stephens). Two of the three comments were accepted and included in the standard.

II. Potable Water Rinse (3i6r2) – Allow potable water rinse on high or low temp warewash machines after sanitizing rinse. Certain restrictions apply.
   A. Two spirited teleconference calls were conducted.
   B. Negative opinion letter was received from EPA.
   C. Issue was balloted and failed with 10 negatives and 15 affirmatives. Negative ballots have not yet been addressed. 9 of the 10 negative ballots included the reason that it conflicts with the FDA Food Code.
   D. Recommendation from NSF is to reballot since the Conference for Food Protection (CFP) recommended the FDA revise the Food Code to allow potable water rinse on warewash equipment.

III. Warewash Soil Test Proposal – This proposal was received by NSF after the cut-off date for the February 2007 JC meeting. Therefore it was not on the agenda for that meeting. TG Chairman originally agreed to deliberate after the above two issues were resolved. However, it has not yet been discussed.
   A. Recommendation was made by TG Chairman to return the submittal to the JC for discussion and recommended action.

Respectfully,

Joel F. Hipp
Agency Approval Engineer

copies to:

Z. Michael
File (2) NSF TG Report
Information Paper

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Signature *Rex W. Brandt Date 5/8/08

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Subject: NSF Standard 6 Task Group Activity
(If the topic concerns a Task Group’s activity or status, please identify the Task Group and the relevant NSF Standard. If the report involves an issue to be balloted or for which a decision of the Committee is need, an Issue Paper should be completed.)

Brief statement of information provided:

NSF STD 6 Task Group activity this past year covered boilerplate editorial updates and one change to Section 6.3.2 Test method (Heat treatment cycle – Product heating) area.

In section 6.3.2, Test Method, the number of thermocouples located in the Product Reservoir changed from 1 to 3. Instead of one thermocouple being located in the Center, 1” below the surface of the product we are now requiring three thermocouples in the reservoir, new locations are as follows:

**Thermocouple #1:** (when facing the front of the unit) 1.0 ± 0.25 in (25 ± 6.4 mm) from the front interior wall, 1.0 ± 0.25 in (25 ± 6.4 mm) below the surface of the product and centered left-to-right.

**Thermocouple #2:** centered front-to-back, centered top-to-bottom, centered left-to-right.

**Thermocouple #3:** (when facing the unit) 1.0 ± 0.25 in (25 ± 6.4 mm) from the rear interior wall, 1.0 ± 0.25 in (25 ± 6.4 mm) above the bottom horizontal plane of the product reservoir, and centered left-to-right.

This was done so NSF will have enhanced temperature profile of the mix in the reservoir during this product heater cycle which will insure all of the mix in the reservoir is being heated and cooled to the proper temperature required by the standard.

Signature    Rex Brandt        Date 5/8/08

Information Paper.doc
Information Paper

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Signature *Jim Brady* Date May 6, 2008

*Type written name will suffice as signature
Subject:
(If the topic concerns a Task Group's activity or status, please identify the Task Group and the relevant NSF Standard. If the report involves an issue to be balloted or for which a decision of the Committee is need, an Issue Paper should be completed.)

Standard 2 Task Group Activities

Brief statement of information provided:

**Item #1:** Term “deburr” submitted by Mr. J. Douglas Park

**Background:** The term deburr is a manufacturing term that is insufficient to render a finished, safe and cleanable edge.

**Task Group Response:** Thorough discussion and research revealed that in all 3 instances where this term currently appears in Standard 2 (5.4.2, 5.1.4 and 5.16.3), the current definition already addresses Mr. Park's concerns:

*Deburr definition:* To remove sharp or rough surfaces that may cause injury.

**Task Group Recommendation:** No change is necessary

**Item #2:** Track and guide clean-out holes submitted by Mr. J. Douglas Park

**Background:** Clean-out hole language is not emphasized for design and construction. Amend second sentence of the current 5.9.3 wording from “Exposed channel sections on single panel doors shall be inverted or easily cleanable. Clean-outs shall be provided if channels are not inverted: to “If channels are not inverted, clean-outs shall be provided and designed to be easily cleanable.

**Task Group Response:** The term clean-out refers to small holes in the bottom of the door channel that will allow dirt and debris to escape during manual cleaning. They aid in cleaning out the channel and do not themselves create cleanability concerns. In addition, 5.1.5 would already cover any concerns: 5.1.5: *Splash zone surfaces shall be accessible and easily cleanable.* Standard 51, 5:1 would also address this concern: *Materials shall be smooth and easily cleanable.*

**Task Group Recommendation:** No change is necessary
**Item #3:** Allowable accessibility on counter top equipment with 3" legs submitted by Mr. Tony Gagliardi.

**Background:** The current 20" allowed is too much of a reach.

**Task Group Response:** A demonstration revealed 16" as a more practical reach.

**Task Group Recommendation:** Change 5.20.2 third and fourth bullets as follows:

- Elevated on legs that provide a minimum unobstructed clearance beneath the unit of 3.0 in (76mm) provided that no part of the counter top under the footprint of the unit equipment is more than 20 16 in (50 41 cm) from the point of cleaning access; or
- Elevated on legs that provide a minimum unobstructed clearance beneath the unit of 2.0 in (50 mm) provided that no part of the counter top under the footprint of the unit equipment is more than 3.0 in (76 mm) from the point of cleaning access

**Reason:** This reduces the maximum reach requirement for cleaning to a more realistic distance to improve cleanability. It clarifies the intent that the point of access is under the footprint of the equipment and not the full depth of the counter top on which the equipment is installed.
Item #4: Section 5-Design and Construction change word ‘under’ to ‘within’ submitted by Mr. Steve Tackitt.

Task Group Recommendation:

5 Design and construction
This section contains design and construction requirements for equipment covered within the scope of this Standard.

Item #5: Regarding impact testing, reference the British version of ANSI/UL impact testing (BS857:1967) submitted by Mr. Joe Phillips

Background: When European equipment is certified, UL or ANSI references have to be made for safety glass, which is not as common as the British Standard. This reference would be located in the normative section and in the text of the standard. Only the impact portion of the standard test within BS857:1967 would be referenced.

Task Group Response: Discussion focused on:
1. Comparability between the two impact standards
2. The need to be aware of any future BS857:1967 impact revisions.

Task Group Recommendation:

2 Normative references

BS857:1967. Specification for safety glass for land transport with following footnote:
British Standard, 389 Chiswick High Road, London W4 4AL United Kingdom
www.bsi-global.com

Item #6: Wording of 5:15 heading submitted by Philippa Durbin

Background: “Openings to food zones” should read “Openings into food zones”.

Task Group Recommendation:

5.15 Openings into food zones
Reason: More consistent with the first sentence which states “Opening in food zones shall be...”
**Item #7:** Fasteners as they relate to strain relief devices used to clamp the electrical cords in place submitted by Mike Kohler

**Background:** These devices are necessary to comply with electrical safety standards often using threaded fasteners to clamp the electrical cord in place. Permissible exposed treads are exceeded.

**Task Group Response:** This is a non-food zone issue. The current food zone requirements are still in effect even if this change is made in the non-food zone section of the standard.

**Task Group Recommendation:**

5.5.5 There shall be no exposed threads, projecting screws, or studs in a food or splash zone. There shall be no more than 2.5 exposed threads or ¼ in (0.25 in, 6.4 mm) of exposed threads, whichever is less, in a nonfood zone. Exposed threads on electrical cord strain relief devices in a nonfood zone shall be exempt.

**Item #8:** Change the wording of the scope of Standard 2, unknown proponent

**Background:** Change first sentence of third paragraph to …shall also comply with/conform to….

**Task Group Response:** There was no determinable reason to make this change.

**Task Group Recommendation:**

No change is necessary.

**Item #9:** Change wording regarding internal corners for covers (5.13.8)

**Task Group Recommendation:**

5.13.8 All internal corners and angles of roll covers, tilt covers, and other similar covers that are less than 135° shall be more than 135° or shall have a minimum smooth radius of 1/8 in (0.13 in, 3.2 mm)....

**Item #10:** Diagrams from 1988 supplemental document

**Background:** Some descriptive detail diagrams contained within this supplemental document will be incorporated as diagrams at the end of Standard 2. This supplemental document will no longer be maintained.

Signature  

Jim Brady

Date  May 15

Information Paper.doc