TO: NSF Joint Committee on Food Equipment
FROM: Michael Perez, Chairperson of the Joint Committee
DATE: July 21, 2020

SUBJECT: Proposed revision to NSF/ANSI 25 – Vending Machines for Food and Beverages (25i10r4).

Draft 4 of NSF/ANSI 25, issue 10 is being forwarded to the Joint Committee on Food Equipment (JCFE) for consideration. Please review the changes proposed to this standard and submit your ballot by August 18, 2020 via the NSF Online Workspace (http://standards.nsf.org).

When adding comments, please include the section number for your comment and add all comments under one comment number whenever possible. If additional space is needed, you may upload a word or .PDF version of your comments online via the browser function.

**Purpose**
The purpose of this ballot is to affirm new and revised language in NSF/ANSI Standard 25. Many of the proposed changes support the incorporation of language from the National Automatic Merchandising Association (NAMA) document *Standard for the Sanitary Design and Construction of Food and Beverage Vending Machines* (v2013).

**Background**
In the information paper *NSF NAMA Joint Com Vending Information Paper 3-2016*, the proponent, representing NAMA, requested a task group be convened to determine the feasibility of combining the NSF/ANSI and NAMA vending machine standards. A copy of the information paper is included with this ballot as a supporting document.

The information paper, received in April 2016, was accepted by the JC Chair and a call to membership was made to reseat a task group (TG) for Standard 25. The TG met on August 16, 2016 and decided this task would best be served by critiquing each section of NAMA separately, conducting gap Analysis straw ballots and propose revised language where necessary.

The TG made minor edits to the purpose (section 1.1) and scope (section 1.2) of the standard, providing the foundation with which the remaining sections were discussed. The TG met seven more times, performing the gap analysis for each section, discussed language revisions in great detail, and conducted a number of straw polls to support the efforts.

After the straw poll completion of each section, the content expert and issue proponent incorporated the various suggestions into a revision 2 straw poll encompassing all relevant sections. The TG voted 6 : 2 : 0 (Yes : No : Abstain) and provided many comments which were discussed during the October 8, 2019 teleconference. Several additional edits were made and a revision 3 straw poll of the TG resulted in a vote of 9 : 2 : 0 (Yes : No : Abstain).
Each of the various comments from revision 3 were thoroughly discussed during two consecutive teleconferences in March and April, 2020. A straw poll of revision 4 was sent to the TG resulting in a vote of 6 : 0 : 1 (Yes : No : Abstain).

Commensurate to this work, a small ad-hoc group was created to discuss the addition/revision of terms to Standard 170 pertinent to the proposed changes to Standard 25. This group met three times and discussed possible revisions in great detail. A copy of the ad-hoc Group on Vending Machine Terminology teleconference meeting summary is included with this ballot as a supporting document.

The list of terms proposed for addition to NSF-ANSI 170 include:

- deionization (DI) or ion exchange
- filtration-only machine
- reverse osmosis (RO)
- self-closing
- vended water
- water vending machine

A preliminary copy of the proposed definitions is included with this ballot as a supporting document. However, please note that the proposed terms are NOT a part of this ballot and will be balloted separately at a future time.

Special thanks to the TG, chaired by Dipak Negandhi and the ad-hoc group on terminology for the incredible amount of work accomplished over the past 4 years.

If you have any questions about the technical content of the ballot, feel free to contact me.

Michael Perez, Chairperson
Joint Committee on Food Equipment
C/o Joint Committee Secretariat
Allan Rose
NSF International
Tel: (734) 827-3817
E-mail: arose@nsf.org
1 General

1.1 Purpose

This Standard establishes minimum food protection and sanitation requirements for the materials, design, construction, and performance of vending machines for food and beverages and their related components.

1.2 Scope

This Standard contains requirements for food and beverage vending machines, including those that vend packaged food and beverages and those that vend food and beverages in bulk.

Vending machine materials and components covered under other NSF or NSF/ANSI Standards or Criteria shall also conform to the requirements therein. This Standard is not intended to restrict new design, provided that such design meets the minimum specifications described herein.

Rationale: The Task Group agrees that no substantive language revisions are required to incorporate the NAMA Standard into Standard 25, and only minor edits are necessary to Sections 1.1 and 1.2 regarding Purpose and Scope. No language updates are proposed for sections 1.3 and 1.4

Regarding the vending of water (prepackaged and in bulk), Standard 170 defines Food as: “A raw, cooked, or processed edible substance, ice, water, beverage, or ingredient intended for human consumption”.

1) Standard 25 does not address Lobster Habitat Machines specifically. Section 803.2 of the NAMA standard does include language for these equipment, however after extensive discussion, the Issue Proponent confirmed this equipment hasn’t been relevant for some time and the Task Group agreed this language is not needed in Standard 25.

2) The Task Group organized an Ad-Hoc Group to examine definitions, common and not common to both Standards. This group has met several times and extensively discussed a long list of terms for consideration. The notes of these meetings and the resulting terms are included here as support documents, however the terms themselves will be balloted separately and go into Standard 170.

Notes:

1) Standard 25 does not address Lobster Habitat Machines specifically. Section 803.2 of the NAMA standard does include language for these equipment, however after extensive discussion, the Issue Proponent confirmed this equipment hasn’t been relevant for some time and the Task Group agreed this language is not needed in Standard 25.

2) The Task Group organized an Ad-Hoc Group to examine definitions, common and not common to both Standards. This group has met several times and extensively discussed a long list of terms for consideration. The notes of these meetings and the resulting terms are included here as support documents, however the terms themselves will be balloted separately and go into Standard 170.

•
5 Design and construction

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

5.8 Cabinet doors

5.8.1 Cabinet doors shall be sized to fit their openings and shall close properly. The space between door and cabinet in closed, locked position shall not exceed 1/16 in (1.6 mm) at any point along the interface. Gasketing shall be provided, if necessary, to meet this requirement. A door closure meeting this specification shall be considered to prevent moisture and dust entry if:

- effective gasketing is used; or
- jambs or flanges are used to form an L-shaped entry path to the interface.

*Rationale: Additions based on gaps between NSF 25 and NAMA standard.*

5.11 Covers

5.11.1 Covers protecting a food zone shall overlap the opening and shall be sloped to provide drainage from the cover surface. Inset covers for stackable pans are exempt from the slope requirement. Areas of handles and knobs of covers are not required to be sloped.

5.11.2 Covers having slotted openings designed to allow serving utensils to remain in the food shall be exempt from 5.11.1. Slotted openings shall be no larger than 1 1/2 in x 1 in (38 mm x 25 mm) and shall be protected by a raised rim of at least 3/16 in (0.19 in, 5.0 mm).

*Rationale: after extensive discussion, the Task Group agreed 5.11.2 should be removed from Standard 25. Although this language has no connection to the NAMA incorporation project, it is clear that it is not needed in Standard 25. This language is already provided in Standard 2 and was either erroneously added to Standard 25 in the past or is now obsolete here.*

5.19 Equipment mounting

5.19.5 Kick plates on floor mounted equipment shall be removable. If kick plates are provided on machines, they shall be readily removable to permit access to the space beneath for inspection and cleaning. Kick plates shall be capable of being opened or removed without opening the machine cabinet door.

*Rationale: Additions based on gaps between NSF 25 and NAMA standard. Ballot comments and task group discussions transpired regarding kick plate removability. NAMA requires readily removable, while NSF standards (25 and others) require it only to be removable. Language above corrects for this.*
5.19.6 If the bottoms of the side panels are bent inward to form a ledge for holding levelers, the horizontal ledge formed shall be no wider than 2 in (50 mm) and shall be easily cleanable. It shall not form a “U” channel or other uncleanable ledge. Hollow sections shall conform to 5.6.

**Rationale:** The standard is addressing the ledge, regardless of what the ledge is intended for.

5.19.7 If levelers are used, their threads shall be protected from soiling. Threads that extend through the bottom edge of side panels shall be easily cleanable.

5.19.8 All carbon dioxide (CO2) cylinders installed in vending machines shall be anchored by straps, chains clamps, or other anchoring device intended to hold cylinders in place so they will not tip or fall.

**Rationale:** Current version of standard 25 does not address carbon dioxide cylinders.

5.22 Temperature control

5.22.1 Vending machines that store and dispense potentially hazardous foods shall be equipped to maintain the temperatures specified in 6.2. Potentially hazardous food located in vending machine pipes, fittings, tubes, or dispensing devices outside of the effective heating or refrigeration compartment shall also be maintained at the applicable temperatures specified in 6.2; auxiliary heating or cooling should be used if necessary.

5.22.2 Vending machines shall not be designed to store packaged food by submersion in water, liquids, or ice.

5.22.3 Vending machines that store and dispense potentially hazardous foods shall be equipped with cut-off controls that conform to the requirements specified in 6.4. Vending machines with cut-off controls shall be equipped with an accessible manual reset device that is located inside the cabinet or a locked enclosure so that only trained personnel can reactivate the machine.

**Rationale:** Automatic shut off controls are covered under section 5.35.

5.22.3.1 Unless provided with adequate refrigeration, vending machines that heat potentially hazardous foods shall not be equipped with a delay timer or other device that precludes potentially hazardous foods from being heated immediately after being placed in the vending machine.

5.22.4 Vending machines shall not be designed to re-refrigerate potentially hazardous foods after they have been heated to temperatures of 140 °F (60 °C) or higher.

5.22.5 In single compartment machines vending both potentially hazardous and non-potentially hazardous food, areas not provided with an automatic shutoff control shall be clearly marked with labels, lights or other means that will indicate not to stock potentially hazardous food in those areas.

**Rationale:** Additions based on gaps between NSF 25 and NAMA standard.
5.26 Vending stage openings

5.26.1 Service openings to the delivery chute or dispensing nozzles of bulk food and beverage vending machines shall be fabricated to minimize the entrance of dust, seepage, vermin, and other contaminants. Openings shall be designed and constructed to minimize customer handling of food contact surfaces and surfaces in contact with cup rims.

5.26.2 The vending stage of bulk food and beverage vending machines shall have a self-closing door or panel protecting it from dust and vermin. Doors or panels shall fit snugly in the closed position so that there is no crack or opening larger than 1/16 in (2 mm).

NOTE — Controlled location vending machines with a cup-filling area or platform shall not require a door or panel, provided that the area has no openings into the cabinet interior other than those for dispensing nozzles or trapped-waste tubing.

5.26.2.1 The vending stage need not be equipped with a self-closing door or panel if the stage is designed with a mechanism that makes the dispensing nozzles or chutes inaccessible when the machine is not vending. The vending stage drain shall also be equipped with a device, which will preclude the entrance of vermin.

5.26.2.2 Controlled location vending machines with a cup-filling area or platform shall not require a door or panel, provided that the area has no openings into the cabinet interior other than those for dispensing nozzles or trapped-waste tubing.

Rationale: Additions based on gaps between NSF 25 and NAMA standard. The NOTE contains requirements indicated by the use of the word “shall” as well as an exemption, and therefore should not be a NOTE.

•

5.26.7 Automated ice bagging systems that utilize a blower fan to hold the dispensing bag open during the filling process shall be equipped with a filter on the inlet side of the fan to prevent contamination and foreign objects from being deposited in the bag.

Rationale: NSF 25 does not currently specifically state the use of a fan filter in this application, however if there is one blowing directly on a chute or into a bag this would be considered a food zone and is already addressed in a general sense. Nevertheless, the addition of this new section adds specificity and clarity.

•

5.29 Plumbing connections

•

5.29.5 Water Bath Compartments

5.29.5.1 Where water tubing or other product containers are submerged in atmospheric water bath compartments for heat exchange or other purposes, such tubing and containers shall be of one piece construction below the overflow level of the water bath.

Rationale: Added language to address gap between NAMA section 604 and Standard 25.

•

5.32 Ice making equipment

5.32.1 Ice making equipment shall conform to NSF/ANSI 12.
5.32.2 All water tubing and melt water tubing in the ice making system shall be removable.

Rationale: A comment on a previous straw ballot was indicated on 5.32.2 suggesting that this be added to standard 12. However, this requirement is not being proposed for ALL ice makers. It is only being proposed in standard 25. A separate issue would need to be raised to the Standard 12 task group, along with supporting information, if the group feels it should be added to standard 12.

5.35 Automatic shut off controls

5.35.1 Vending machines that store and dispense potentially hazardous foods shall be equipped with cut-off controls that conform to the requirements specified in 6.4. Vending machines with cut-off controls shall be equipped with an accessible manual reset device that is located inside the cabinet or a locked enclosure so that only trained personnel can reactivate the machine.

5.35.2 The manufacturer shall provide a written procedure to permit field-testing of the automatic shutoff control. This procedure may be a part of the operator's manual or a label in the vending machine. The procedure must contain the recommended amount of time needed to service the machine under normal conditions. The field testing shall be conducted in conjunction with section 6.4 of this standard at the time of certification.

5.35.3 Machines with Mechanical Controls:

5.35.3.1 If the automatic shut-off control sensor can be tested in its fixed position, it shall be removable and readily accessible.

5.35.3.2 If the automatic shut-off control sensor must be removed from its fixed position to test, it must be readily accessible and readily removable.

5.35.3.3 The total time for access, removal, testing and replacement of the automatic shut off sensor shall be equal to or less than the time normally required to service the vending machine as indicated in the written procedure provided by the manufacturer.

5.35.4 Machines with Electronic Controls:

5.35.4.1 A visual output for testing the automatic sensor temperature shall be provided.

5.35.4.2 Access to disconnecting the sensor from the control shall be readily accessible and without having to open the door to the food storage compartment. To demonstrate that the automatic shutoff control will disable the vending mechanism or otherwise prevent consumer access to potentially hazardous foods, the sensor shall be capable of being disconnected from the control.

5.35.4 Alternative methods (Mechanical and Electronic Controls)

5.35.4.1 The manufacturer may demonstrate alternative methods of testing the automatic control other than those described here. Such methods shall be deemed acceptable, if all of the following are met:
— the temperature output of the sensor can be verified;
— the automatic shutoff control disables the vending or otherwise prevent consumer access to potentially hazardous foods;
— the test procedure requires opening the door to the food storage compartment and the entire procedure does not exceed 10 min (see open door test); and
— all components needed to gain access for the test procedure are readily removable.

Rationale: Additions based on gaps between NSF 25 and NAMA standard. Additional testing sections will need to be developed/added for both certification and field testing if approved by the Task Group. NAMA currently requires these procedures to be verified prior to certification, therefore adding a testing section to address these procedures will make them a requirement for certification.

5.36 Water Dispensing Units and Water Vending Machines

5.36.1 Water vending machines shall employ treatment processes, which result in the reduction or removal of turbidity, odors, off-tastes and disinfection. Processes for dissolved solids reduction or removal including, but not limited to, deionization and reverse osmosis may also be used.

5.36.2 Cabinet Markings and Claims

5.36.2.1 The water dispensing unit or water vending machine cabinet shall be void of written or graphic material that states or implies a degree of water quality beyond the normal capability of the machine or suggests a source other than actual source.

5.36.2.2 Units that are filtration-only water vending machines shall have a permanent and legible marking stating, "This Machine Intended for Connection to Inspected, Approved Water Systems Containing 500 ppm of TDS or Less," or equivalent wording, and shall be affixed to the external cabinet at or near the water inlet connection.

All other water dispensing units and water dispensing machines shall have a permanent and legible marking stating, "This Machine Intended for Connection to Inspected, Approved Water Systems Only" or equivalent wording, and shall be affixed to the external cabinet at or near the water inlet connection.

5.36.2.3 Water dispensing units shall have a permanent and legible marking stating, "Water dispensing unit only." or equivalent wording, and shall be affixed to the front of the cabinet.

5.36.2.4 All water dispensing units or water vending machines shall have a permanent and legible marking that contains a reminder to consumers to "Use Clean, Sanitized Containers".

5.36.2.5 If both drinking and purified water are dispensed, A concise explanation of the difference shall be located at or near the appropriate product selector.

5.36.2.6 High alkaline machines shall have a permanent and legible marking with the following information:

— advisory on recommended storage; and
— labeling on the level of pH of water dispensed; and
— information on if the water is produced by electrolysis or chemical.

5.36.2.7 If the water is produced by electrolysis, the marking shall also recommend using a opaque container and list an expiration date.

Rationale: Additions based on gaps between NSF 25 and NAMA standard.
5.37.3 **Disinfection**

5.37.3.1 All water processed through a water vending machine shall be disinfected as the last treatment step prior to being dispensed. Closed system carbonation and dispensing units are exempt from this requirement.

5.37.3.2 Machines utilizing ultraviolet disinfection shall be exposed to a minimum dosage of 16,000 µWs/cm² of ultraviolet energy at 254nm.

5.37.3.3 Machines utilizing another means of disinfection shall meet the minimum performance requirements specified by the manufacturer and shall be required to demonstrate its effectiveness.

5.37.3.4 If minerals are to be added into the product water, they shall be added before the disinfection system.

5.37.3.5 Water added to purified water during remineralization shall either be previously disinfected, or added before the disinfection system.

5.37.4 Bottle washers shall not be an integral part of water vending machines.

5.37.5 **Cutoff Controls and Sensors**

5.37.5.1 Water vending machines shall be equipped with sensors and/or controls that will prevent vending in the event of any of the following:

- interruption or failure of the disinfection process to perform as designed; or
- result in vended water quality less than claimed; or
- cause waste container or sump pit overflow; or
- UV lamp is missing, burns out or fractures (if UV light is used for disinfection); or
- dispensing water falls below a 10ppm maximum TDS Standard (for purified water dispensing machines).

5.37.5.2 Where UV Light is used for disinfection, the intensity of the effective radiation shall be monitored by one of the following methods:

5.37.5.2.1 **Intensity Sensing Automatic Controls**

The machine shall be equipped with a sensor to inactive the vending mechanism if the intensity of effective radiation at 254 nanometers falls below the intensity required to provide a minimum dosage of 16,000 microwatt seconds per square centimeter (µWs/cm²) based on the UV system manufacturer's recommended flow rate.

5.37.5.2.2 **Intensity Sensing Manual Controls**

The machine's UV lamp assembly shall be designed to permit intensity testing with a portable meter while precluding direct eye exposure to radiation during the test.

Manufacturers who elect this option shall post in each machine on or adjacent to the UV assembly a permanent instruction label specifying the following:

- a safe test procedure, with appropriate warnings; and
- a minimum intensity level of 16,000; and
— μWs/cm² at 254 nm wave length shall be maintained for the life of the lamp; and
— a lamp replacement policy consistent with the frequency recommended by the lamp manufacturer but in no case greater than 12 months. A renewable record for entering "Lamp Installed" and "Lamp Tested" dates shall be posted near the UV assembly.

5.37.5.3 High Alkaline machines shall have a pH sensor that is placed at the nozzle. The instructions shall include a recommendation that the pH sensor shall be calibrated every 3 months.

5.37.6 The manufacturer shall provide data showing that the flow rate of the machine does not exceed the flow rate of the disinfection system, and that the dosage level is adequate to effectively disinfect the product water. UV systems shall meet the radiation dosage requirement in section 5.35.5.4.

5.37.7 Water Output Quality Data

5.37.7.1 The manufacturer shall provide turbidity, TDS, total coliform, Chloride, Sulfate and Lead levels on a sample of product water collected on the incoming water. Laboratory analysis shall be performed by an ISO 17025 certified laboratory qualified for water analysis.

5.37.7.2 The manufacturer shall provide turbidity, TDS, total coliform, Chloride, Sulfate and Lead levels on two samples of product water collected from the dispensing nozzle. The first sample shall be collected at the start of a 250 gallon test cycle, and the second shall be collected at the end of the 250 gallon cycle. Laboratory analysis shall be performed by an ISO 17025 certified laboratory qualified for water analysis. The maximum allowable levels for the second test are as follows:

<table>
<thead>
<tr>
<th>Drinking water</th>
<th>One turbidity unit (NTU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>turbidity</td>
<td></td>
</tr>
<tr>
<td>TDS (total dissolved solids)</td>
<td>500 mg/L</td>
</tr>
<tr>
<td>total coliform</td>
<td>0 per 100 mL</td>
</tr>
<tr>
<td>chloride</td>
<td>250 mg/L</td>
</tr>
<tr>
<td>sulfate</td>
<td>250 mg/L</td>
</tr>
<tr>
<td>lead</td>
<td>0.015 mg/L</td>
</tr>
</tbody>
</table>

| Purified water | |
|----------------|
| TDS (total dissolved solids) | 10 mg/L |
| total coliform | 0 per 100 mL |
| chloride       | 0 mg/L    |
| sulfate        | 0 mg/L    |

Rationale: Additions based on gaps between NSF 25 and NAMA standard.

5.38 Equipment Marking
The manufacturer shall post the company name and the machine model designation in one of the following locations:

— On the cabinet front; or
— Inside the display area visible through the front; or
— Prominently visible inside the cabinet

This requirement shall not apply to small machines such as, ballgum, pie candy, or table top vending machines when the data plate can be readily seen under normal operating conditions.

Rationale: Current NSF Policy requires the marking of equipment, but it does not specify the location of the information.
6 Performance

6.2.1.3 Acceptance criteria

The air temperature at each thermocouple location shall not exceed 41 °F (5 °C) for the duration of the test (excluding defrost cycles).

*Rationale:* This has not been explicitly pointed out in Standard 25 before, and the discussion with this issue has guided the Task Group to adding this statement to clearly state intent.

6.4 Automatic cut-off controls (abnormal operations test)

The performance requirements in this section apply only to the vending machines that store and dispense potentially hazardous foods.

6.4.1 Cold food vending machines

6.4.1.1 Performance requirement

Automatic cut-off controls on cold food vending machines shall inactivate the vending mechanism if the air temperature in the food storage compartment is greater than 45 °F (7 °C) for more than 15 min 5 min. This requirement does not apply during the 30-min recovery period immediately following machine filling and servicing.

6.4.1.2 Test method

Two abnormal operations tests shall be conducted to verify that the automatic cut-off controls on cold food vending machines will inactivate the vending mechanism when the air temperature of the food storage compartment is greater than 45 °F (7 °C) for more than 15 min 5 min. Each test may be conducted on a unit under no-load, partial-load, or full-load conditions. The tests shall be conducted in a test chamber in which the following conditions are maintained at the start of the test (conditions may be affected by opening of the door to the food storage compartment):

— ambient air temperature of 73 ± 4 °F (23 ± 2 °C); and
— no vertical temperature gradient exceeding 1.5 °F per ft (2.5 °C per m).

The air temperature in the food storage compartment shall be monitored in at least three locations by remote temperature sensors (thermocouples) accurate to ± 1 °F (± 0.5 °C). The air temperature in the food storage compartment shall be allowed to stabilize at 41 °F (5 °C) or below before each test is started.

In the first test, the refrigeration system (i.e., the compressor) shall be disabled and the air temperatures in the food storage compartment monitored. When the temperature of the food storage compartment exceeds 45 °F (7 °C) for a minimum of 15 min 5 min, an attempt shall be made to operate the vending mechanism.

In the second test, the power to the machine shall be interrupted, causing the machine to shut down. The air temperature in the food storage compartment shall be monitored. When the temperature of the food storage compartment exceeds 45 °F (7 °C) for a minimum of 15 min 5 min, the power shall be restored and an immediate attempt shall be made to operate the vending mechanism.
**Rationale:** extensive discussions on this topic with the Task Group. The issue proponent contends the 10 minute difference has never been linked to any foodborne illness issue, yet the 5 minutes currently listed in Standard 25 often leads to false Automatic Cut-offs which can be a big challenge for the industry. The group ultimately decided changing from 5 to 15 minutes would have little to no impact on the quality/wholesome of the food and greatly reduce the likelihood of false cut-off failures.

7 **Product Literature**

The manufacturer shall provide a set of printed instructions for installation, operation and maintenance of the machine that include the following, as applicable:

**Rationale:** While units that utilize in place cleaning are required to provide instructions, there is no requirement for those to be printed, or overall printed instructions for the unit to be provided.

7.1 **Machine Installation**

— a water supply connection warning as specified in section 5.35.2.2;
— a warning to check for grounding continuity; and
— instructions for air-gapped sewer connection if the machine connected to a sewer.

7.2 **In-Place Cleaning and Maintenance**

— step-by-step instructions covering in-place sanitizing procedures along with recommended sanitizing solutions, their concentrations and potential suppliers;

— logical, sequential steps for routine internal and external cleaning, including recommended cleaning solutions, their concentrations, and potential suppliers; and

— the service manual shall include instructions that stipulate the water vending machine shall be serviced once every calendar month or as close to 30 days as possible.

7.3 **Replace/Replenishment Schedule**

— a recommended maximum number of vends, sensor reading or water flow schedule for servicing/replacing filter elements, RO membranes, DI resins, UV lamps and other components with finite effectiveness;

— sanitation instructions for the safe handling of such replaceable materials, as applicable; and

— trouble shooting guidelines for isolating malfunctions indicated by water quality test results.

7.4 **UV or Other Disinfection System Servicing**

— frequency of UV bulb replacement;

— type of UV test meter and testing methods for radiation intensity (unless in-machine sensors are provided);

— procedures and frequency for UV system cleaning to maintain an intensity of 16,000 µWs/cm² at 254 nm; and
— instruction in proper control setting, as necessary, to produce vended water of the quality claimed.

7.5 Parts Replacement/Replenishment

— frequencies for replacement or replenishment of filter element membranes and resins based on vend volumes that are consistent with suppliers’ recommendations.

— warnings against the use of such components that are not identical to the original material or equivalent in function and non-toxicity.

7.6 Vended Water Testing

A recommended semiannual frequency for sampling vended water for total coliform and an every service visit frequency for testing product waters for conductivity, taste, odor and turbidity.

8.0 Claims

— claims can be made that are equal to but do not exceed those of the components used within the machine;

— manufacturers of Water vending machines which make claims that the treatment component of the machine removes or reduces health contaminants that may be found in the water supply, shall provide documentation showing the treatment components having contact with product water have been tested and/or certified to the applicable NSF Standard that substantiates the claims being made; and

**Rationale:** NSF Standards define water as food. Therefore, all the applicable requirements of this standard apply. These are additional requirements that were identified in the NAMA standard that are not covered by the current version of NSF/ANSI Standard 25.