Draft 2 of NSF/ANSI 6, issue 11 is being forwarded to the Joint Committee on Food Equipment for consideration. Please review the changes proposed to this standard and submit your ballot by January 14, 2015 via the NSF Online Workspace (http://standards.nsf.org).

When adding comments, please identify the section number/name for your comment and add all comments under one comment number whenever possible. If you need additional space, you may upload a word or pdf version of your comments online via the browse function.

**Purpose**
This ballot is to affirm changes to sections 5.23, 5.28, and 6.2 covering Remote Product Supply (RPS) systems.

**Background**
The issue proponent submitted issue paper FE-2014-1 for Standard 6 regarding RPS lines and presented the material at the 2015 Food Equipment Joint Committee Face-to-Face meeting. At the meeting, the Joint Committee voted to send this to task group for formal discussion. The task group subsequently met via teleconference 3 times, discussed the issue and developed language for Joint Committee consideration and submitted in this ballot.

The issue paper states that sections of tubing in RPS systems as currently covered in Standard 6, Section 5.28 shall not exceed 7.5 feet. It is thought that this maximum length was established because the length of the brushes used for daily cleaning did not exceed 45 inches in length, which is one-half of the 7.5 foot tube length limitation.

Further, the current language has no requirement to monitor and display the temperature of a potentially hazardous product in an RPS system. It is well known that potentially hazardous foods such as pasteurized dairy mix must be refrigerated to 41°F or below for safety.

The task group proposes new requirements and language be added to Standard 6 to ensure appropriate temperature controls for the food in an RPS system. Extending the permissible length of an RPS system adds flexibility and operational efficiencies. Defining more appropriate performance test criteria ensures that product in the RPS system is maintained at a proper temperature.

**Public Health Impact:**
The proposed changes have no negative impact on public health.

If you have any questions about the technical content of the ballot, you may contact me in care of:

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5.23 Temperature indicating devices for refrigerated cabinets

5.23.1 Refrigerated cabinets on dispensing freezers intended for the cold storage of potentially hazardous food or beverages shall have a securely mounted temperature-indicating device that clearly displays the air temperature in the cabinet. Temperature-indicating devices shall be accurate to ± 2 °F (± 1 °C) and shall be graduated in increments no greater than 2 °F (1 °C) in the intended range of cabinet temperatures. The device shall be removable and easy to read. The sensing element of the device shall be easily cleanable and located to reflect the warmest temperature of a refrigerated cabinet. A temperature-indicating device is not required in refrigerated cabinets intended for frozen or semi-frozen food only.

5.23.2 Remote product supply systems (if provided) shall have a securely mounted temperature-indicating device that clearly displays the temperature of the product. Sensors may be positioned to indirectly measure the product temperature if the temperature-indicating system is designed to display the actual product temperature. Temperature-indicating devices shall be accurate to ± 2 °F (± 1 °C) and shall be graduated in increments no greater than 2 °F (1 °C) in the intended range of product temperatures. The device shall be removable and easy to read. The sensing element of the device shall be easily cleanable and located to reflect the representative temperature of the product.

Rationale: NSF/ANSI Food Equipment Standards and FDA Food Code section 4-203.11 require a ± 2 °F (± 1 °C) accuracy for the measurement of food temperatures. It may not always be feasible for the sensor to directly measure product temperature, therefore, an option for indirect measurement is offered. This language is based on what is currently in 5.27 of NSF/ANSI 18.

5.28 Remote product supply systems

When manual cleaning is intended, sections of tubing for a remote product supply system shall not exceed 7.5 ft (2.3 m) in length and shall comply with requirements in 4 and 5 applicable to direct food
contact zones intended for manual cleaning. When in place cleaning is intended, the overall length of the tubing shall not exceed 50 ft (15.2 m) and shall comply with the requirements of 4 and 5 applicable to direct food contact zones intended for in place cleaning.

**Rationale:** Previous criteria pertained only to sections of tubing 7.5' or less in length that were intended for manual cleaning. This recommended revision provides guidance for remote product supply systems that are either intended for manual cleaning or the longer extended remote product supply systems that require specialized in-place cleaning procedures to effectively clean and safely disinfect its product lines. The 50 ft maximum is established based on current Standard 6 manufacturers mix pump limitations for overcoming line length.

6 Performance

6.2 Product temperature

6.2.1 Performance requirement

Product shall be maintained at a temperature of 41 °F (5 °C) or less while held in the product reservoir(s), the dispensing head, and the remote product supply systems (if provided) of the dispensing freezer. This requirement does not apply during the heat treatment cycle of a heat treatment dispensing freezer. This requirement also does not apply to batch dispensing freezers that do not have a product reservoir.

6.2.2 Test method

The ability of dispensing equipment to maintain the temperature of its contents at 41 °F (5 °C) or below shall be evaluated by monitoring the temperature in the product reservoir (hopper or refrigerated cabinet), and in the product holding area of the dispensing head, and in the remote product supply systems (if provided). The equipment, while operated in accordance with the manufacturer's instructions, shall be evaluated in a test chamber in which the following conditions are maintained for the duration of the test:

- ambient air temperature of 86 ± 3 °F (30 ± 2 °C); and
- no vertical temperature gradient exceeding 1.5 °F/ft (2.5 °C/m).

The product reservoir shall be filled with the intended product mix at 35 ± 1 °F (1.5 ± 0.5 °C) and the system shall be purged of entrapped air by dispensing approximately 1 qt (1 L) of product. Prior to starting the test, the equipment shall be allowed to establish thermal equilibrium according to the manufacturer's instructions, or the compressor shall be allowed to cycle on and off at least two full times at room temperature. At the start of the test period, the temperature of the product shall be 41 °F (5 °C) or below. Remote temperature sensors with an accuracy of ± 0.5 °F (± 0.3 °C) shall be used to monitor the product temperature. A sensor shall be placed 1 ± 0.1 in (25 ± 2 mm) below the product level in the middle of the product reservoir. A sensor shall be placed in the product holding area of at least one dispensing head. If a dispensing freezer has a remote product feed system, a sensor shall be placed in the product tubing, 5 ± 0.25 in (127 ± 6.35 mm) from each end and in the middle of the remote feed product supply line(s). The temperature at each sensor location shall be recorded every 5 min during a 4-h test period. This test shall be performed while the freezer is operated in the standby (night) mode, if available.
Units that are designed with a temperature-indicating system that indirectly measures product temperature in the remote product supply system, as permitted in 5.23.2, shall be permitted to reach a steady state temperature for the purpose of comparing the temperature reading of the temperature-indicating device to the temperature sensed by the test sensor located in the product tubing. This comparison can be made at any point in time during the test and does not need to be made through the entire test duration.

6.2.3 Acceptance criteria

The product temperature at each sensor location shall not exceed 41 °F (5 °C) for the duration of the test.

Units that are designed with a temperature-indicating system that indirectly measures product temperature in the remote product supply system, as permitted in 5.23.2, shall be capable of displaying a temperature within ±2 °F (±1 °C) of the temperature sensed by the test sensor located in the product tubing.

Rationale: Added language (shaded) is needed to ensure that the food or beverages within the remote product supply systems are included in the temperature maintenance requirements when subjected to the tests environmental conditions.

By requiring three temperature sensors at the beginning, middle and end of a remote product supply systems product lines, the performance test is better able to validate the system’s ability to maintain food or beverage temperatures that are inside of the product lines are maintained at ≤41°F temperatures as is required by the food code.

A means to verify the accuracy of indirect temperature measuring systems is provided.