TO: NSF Joint Committee on Food Processing Equipment
FROM: Michael Halko, Chairperson of the Joint Committee
DATE: October 31, 2014
SUBJECT: Proposed revision to NSF/ANSI 3-A 14159-3 – *Hygiene Requirements for the Design of Mechanical Belt Conveyors Used in Meat and Poultry Processing* (14159-3i3r1)

Draft 1 of NSF/ANSI 3-A 14159-3, issue 3 is being forwarded on behalf of Rocklyn Bates to the Joint Committee on Food Processing Equipment for consideration. Please review the changes proposed to this standard and submit your ballot by November 21, 2014 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, please upload a word or pdf version of your comments online via the browse function.

**Purpose**
The purpose of this ballot is to update the language regarding cleaning and inspection in Section 5.2.2 and add a supporting definition for the term "Clean out of place (COP)."

**Background**
Under Section 5 of this Standard (Design and construction), there currently doesn’t exist language that addresses in an optimal manner the specifics surrounding modular conveyor belts. Modular belts include sections used to readily increase the belt width and length using rods to assemble the modular sections. These sections have different exposed surfaces than the traditional conveyor belt systems making the cleanability properties different and potentially more difficult. These belt types have become commonly used in the dairy and meat & poultry industries creating the need for a more comprehensive method of testing the cleanability of these styles of belts.

The USDA Dairy Grading Branch has found that if there is dedicated spray cleaning devices used to impinge the belt’s surfaces, joints, and sockets the belts can be cleaned effectively. Issue paper FPE-2014-1 was submitted with language updates reflecting these suggestions. The Joint Committee on Food Processing Equipment met, discussed and made further language suggestions via teleconference on September 25, 2014 and October 23, 2014. These language updates are reflected in this ballot.

**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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Hygiene requirements for the
design of mechanical belt conveyors
used in meat and poultry processing

3 Definitions

3.3 cleaned in place: Cleaning of equipment by impingement or circulation of flowing chemical solutions, cleaning liquids, and water rinses, without dismantling, into, onto, and over surfaces in equipment or systems designed for this specific purpose.

3.4 clean out of place (COP): Removal of soil when the equipment is partially or totally disassembled. Soil removal is effected by circulating chemical solutions and water rinses in a wash tank, which may be fitted with circulating pump(s).

3.45 cleaning: Removal of soil.

Note: subsequent definitions alphabetically positioned after “clean out of place” will have their respective reference numbers increased by “1”. The presented example above is the term “cleaning” changing from 3.4 to 3.5.

5 Design and construction

5.1.2 Cleaning and inspection

Surfaces shall be cleanable. For mechanical belt conveyors intended to be disassembled, the design shall ensure that product contact surfaces are easily accessible for cleaning and inspection, and the demountable parts shall be easily removable. Alternatively, mechanical belt conveyors designed to be cleaned in place shall be designed so that product contact surfaces and all non-removed appurtenances thereto can be mechanically cleaned and are easily accessible and easily removable for inspection.
5.1.3 Disinfection and sanitization

Where appropriate, mechanical belt conveyors shall be designed such that surfaces can attain the required disinfection or sanitization conditions.

5.1.18 Belts

Belts with fabric carcasses (substrate materials) shall have edges sealed with an acceptable compound.

All fabric components of belting materials, including edges, shall have at least a 0.006 in (0.15 mm) thick cover of an acceptable material above the fabric and shall conform to the requirements of 4.2.2.

Conveyor belts shall be designed to be endless. Solid, flat, non-modular belts shall not be joined by exposed stitching or alligator clips.

Belts shall comply with 6.

5.1.18.1 Belt accessories

Belt accessories such as, but not limited to, guiding strips, flights, and spill edges shall comply with the applicable sections of this Standard.

5.1.19 Spraying devices

Radii on spraying devices may be less than $\frac{1}{32}$ in (0.031 in, 0.79 mm). When radii are less than $\frac{1}{32}$ in (0.031 in, 0.79 mm), the internal angles must be cleanable and inspectable.

There shall be no exposed threads or crevices on product contact surfaces of high and low pressure spraying devices except where required for functional and safety reasons.

5.2 Non-product contact surfaces

5.2.1 General

Mechanical belt conveyors shall be designed in such a manner as to prevent the retention of moisture, ingress, and harborage of pests and soils, and to facilitate cleaning, inspection, servicing, and maintenance. Equipment shall be designed such that non-product surfaces can attain the required sanitization or sterilization conditions.

The possibility of adverse galvanic reactions between dissimilar materials shall be taken into consideration.
5.2.2 Cleaning and inspection

Surfaces shall be cleanable. For equipment intended to be disassembled, the design shall ensure that relevant areas are easily accessible for cleaning and inspection and the demountable parts shall be easily removable. Alternatively, equipment may be designed to be cleaned in place. Cleaned in place equipment shall be designed to allow access for inspection after cleaning.

Open belting and modular belting shall be exempt from the cleaning test procedures in Section 6 provided it can demonstrate acceptable cleaning when provided with an integral mechanical cleaning device that is located so all exposed surfaces of the belting and sprockets are automatically cleaned. Cleaning solution catch pans or trays shall be designed to be self-draining and cleanable. All Belt surfaces, sprockets, catch pans and trays shall be accessible for inspection, except that:

If the belt is of a size manageable by one person, is readily accessible and readily removable, it may be cleaned in a COP tank.

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