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Joint Committee on Biosafety Cabinetry

July 10, 2024

Proposed revision to NSF/ANSI: 49 – Biosafety Cabinetry: Design, Construction, Performance and Field Certification (49i173CCr1)

Revision 1 of NSF/ANSI 49, issue 173CC is being forwarded to the Joint Committee on Biosafety Cabinetry for consideration. Please review the proposal and **submit your ballot by July 31, 2024** via the NSF Online Workspace.

Please review all ballot materials. 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 MS Word or .PDF version of your comments directly to the NSF Online Workspace.

Purpose

The purpose of this ballot is to affirm revised and new language related to the many design and construction requirements throughout Standard 49.

Background

Issue paper **BSC-2022-03 – Design and Construction Requirements** highlighted that the design and construction requirements in standard 49 haven't received much evaluation in many years. The issue proponent suggested the establishment of task group (TG) to discuss updating the various subsections. This issue was presented to the JC during the 2022 Face-to-Face meeting at which time a TG was motioned into existence. Since that time, the TG has met four times and proposed a multitude of updated subsections.

These proposals are extensive in number and the TG discussed breaking them up into several subsection ballots to make the work more digestible. During the most recent meeting (April 22, 2024) the issue proponent presented 19 different subsections and the group agreed to send each to individual straw ballot first with the TG. The straw ballots are now being recombined into 4 larger JC approval ballots.

This JC approval ballot is a combination of 5 straw ballots that all received unanimous affirmative approval by the Task Group and is presented here for your consideration.

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

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c/o Allan Rose, Joint Committee Secretariat, NSF
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[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by grey highlighting. Rationale Statements are in *red italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI International Standard for Biosafety Cabinetry —

Biosafety Cabinetry: Design, Construction, Performance, and Field Certification

***Rationale**: Language regarding the many design and construction requirements in Standard 49 have not been evaluated for many years. These proposed revisions intend to do so.*

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5 Design and Construction

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5.18 ~~Fixed panels~~

~~Fixed panels shall be designed, constructed, and fastened to eliminate projections and openings.~~

***Rationale**: there is no historical record of violation of this and likely adds little value.*

5.19.1 Single panel

Single panel doors (see Figure 8) and covers shall be fabricated to minimize the collection of foreign matter ~~and be designed without channel sections at the bottom. Channel sections, if used, shall be inverted or shallow and wide enough to be easily cleanable.~~ Channel tracks shall not have a depth greater than the width of the channel top. Clean-out holes shall be provided in all channels that are not inverted.

***Rationale**: Proposing to change this to language from NSF Standard 2 because it is less ambiguous.*

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5.25.2 Internal cabinet supply / exhaust fan interlock alarm

When a cabinet contains both an internal downflow and exhaust fan, they shall be interlocked so that the downflow fan shuts off whenever the exhaust fan fails. An audible and visual alarm shall signal the failure. If the downflow fan fails, the exhaust fan shall continue to operate, and an audible and visual alarm shall signal the failure. Audible and visual alarms shall activate within 15 seconds of the alarm condition initiating.

***Rationale**: This applies the same time requirement specified for the type B exhaust and canopy alarms.*

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5.25.6 Type A1, A2, or C1 cabinet low inflow alarm

Type A1, A2, or C1 cabinets may contain an inflow alarm system to alert the user of a potential loss of personnel protection. When present, an audible and visual alarm shall be required to indicate within 15 seconds of reaching the manufacturer-specified inflow alarm set point.

When starting the cabinet blowers from a dead stop, the inflow alarm must activate a visual indication until the cabinet either enters into a visually indicated warm up period or the appropriate inflow velocity is achieved to ensure proper alarm system function.
If the manufacturer-specified inflow velocity alarm set point is more than 10 ft/min (0.051 m/s) less than the nominal inflow velocity, the tests as specified in Section N-1.6.3.1.h will be performed with the inflow velocity at this set point ± ~~3.0~~2.0 ft/min (~~0.015~~0.01 m/s). ~~If the manufacturer-specified inflow velocity alarm set point is no more than 10 ft/min (0.051 m/s) less than the nominal inflow velocity, the inflow alarm point shall be tested as specified in Section N-1.6.3.1.h.~~

Rationale*: Correcting to the new test tolerance. The last sentence is redundant (covered in N-1) and confusing.*

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5.31 Total work area components placement

Readily removable interior total work area work surfaces, intake air grills, sash wipes, and exhaust air grills shall be designed and constructed to ensure fixed reinstallation in their proper operating positions.

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5.34 User-modified pass-throughs

— Retaining element(s) for the various cables, tubes, etc. shall be readily replaceable by the user.
— The pass-through shall bear cautionary labels both interior and exterior referencing use.
— The pass-through shall be connected to a negative pressure zone to prevent contaminated air from escaping the cabinet.