NSF Standard(s) Impacted: NSF 50

Background:

NSF revision 50i95r1 revised the life test requirements for treatment equipment to include methods for testing equipment that was not designed to be operated 24 hours per day. This allowed residential equipment to be operated at the manufacturers stated maximum daily operation time. So if a manufacturer claims on the data plate that the unit was intended for operating at a maximum 8 hours per day then the unit would be tested 8 hours on, 16 hours off for a total operating time of 3000 hours, which is 125 days.

However manufacturers could specify a shorter off cycle to accelerate the test and complete in much less than 125 days. For example a unit operated 8 hours on and 1 minute off could finish 125 cycles in 42 days. This would present an equivalent or more stringent test for this type of equipment.

Recommendation:
Revise Annex I to allow for accelerated life cycle testing for those systems operating less than 24 hours per day.

I.4 Method
a) Assemble three units according to the manufacturer’s instructions.

b) Connect the units to a re-circulating tank filled with water conditioned to the applicable temperatures specified in Annex I, section I.1.3. Adjust the pressure source to obtain a pressure that is 80 ± 0.5% of the maximum rated pressure. Set the output rate to deliver a minimum of 80% of the rated output specified by the manufacturer.

c) Start the units and allow them to operate per manufacturer’s instructions continually for a period of 3000 h.

i) Units that are not designed for continuous operation shall be set at the maximum allowable daily operation time as specified by the manufacturer. The total test period shall remain 3000 hours or an accelerated life test may be used consisting of multiple cycles per day so that a total equivalent of 125 days of operation (equivalent to 3000 hours) is completed (eg. 125 cycles of 8 hours on and 16 hours off may be shortened to 125 cycles of 8 hours on and 1 minute off). If the output is also variable in addition to the daily operation time, it shall be set to the level specified in (c).

d) Maintain the units in accordance with the manufacturer’s maintenance instructions. Manufacturer shall not specify parts replacement as maintenance within 3000 h.

Reason: Allow for accelerated life cycle testing for those systems operating less than 24 hours per day.

I.56 Acceptance criteria
Units designed for continuous operation:

At least one of the three units shall complete 3000 satisfactory operating hours, and a minimum of 8000 satisfactory operating hours shall be accumulated among the three units. At the conclusion of the testing, the units with 3000 operating hours shall be evaluated to perform as intended by the manufacturer and shall continue to conform to the applicable performance requirements as specified in the products life test section.
Units not designed for continuous operation (residential):
At least one of the three units shall complete 3000 total elapsed hours, or the accelerated test equivalent to 125 days of operation, during which the daily operation time is set to the maximum level as specified by the manufacturer. A minimum of 8000 total elapsed hours, or the accelerated test equivalent to 334 total days of operation, shall be accumulated among the three units. At the conclusion of the testing, the unit with 3000 operating hours, or the accelerated test equivalent to 125 days of operation, shall be evaluated to perform as intended by the manufacturer and shall continue to conform to the applicable performance requirements as specified in the products life test section.

Reason: Allow for accelerated life cycle testing for those systems operating less than 24 hours per day.

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

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