TO: Joint Committee on Wastewater Technology
FROM: Dr. Robert Powitz, Chair of the Joint Committee
DATE: June 3, 2020
SUBJECT: Proposed revision to NSF/ANSI 350 – *Onsite Residential and Commercial, Water Reuse Treatment Systems* (350i33r3)

Revision 3 of NSF/ANSI 350, issue 33 is being forwarded to the Joint Committee for consideration. Please review the proposal and submit your ballot by June 24, 2020 via the NSF Online Workspace <www.standards.nsf.org>.

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

**Purpose**
This ballot will add language regarding system conditions in section 8 of NSF/ANSI 350.

**Background**
Per NSF/ANSI 350, during the design loading, a minimum of 2/3 of the total scheduled data days shall be collected to consider a test valid. The standard has expressed the site conditions and events that may jeopardize the validity of the performance testing; however, there is no criteria for a system that has a prolonged period of no discharge.

A question has been raised about a system deficiency that could lead a system to have no discharge for an extended period of time, yet still meet the minimum sample requirement. The test should not be considered valid if a system has no discharge for a set period of time, as long as it is due to unit design or malfunction, and not a site malfunction.

An r1 ballot received a negative vote and comment at Joint Committee ballot and was sent back to the WWT TG on NSF/ANSI 350. Language was reviewed and revised over multiple calls, resulting in the r3 language presented for consideration here.

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

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NSF/ANSI Standard
For Wastewater Technology –

Onsite residential and commercial water reuse treatment systems

8 Performance testing and evaluation

8.6 Criteria (applicable to all reuse systems evaluated in accordance with Sections 8.1, 8.2, and 8.3)

8.6.1 General

8.6.1.1 If conditions during the testing and evaluation period result in system upset, improper sampling, improper dosing, or influent characteristics outside of the specified ranges, an assessment shall be conducted to determine the extent to which these conditions adversely affected the performance of the system. Based on this assessment, it is acceptable to exclude specific data points from the averages of effluent measurements. Rationale for all data exclusions shall be documented in the final report.

8.6.1.2 When the 30-day average or geometric mean concentration of one or more individual influent parameters are less than the required minimum value, individual data days may be excluded to bring the 30-day period within range. When influent data is excluded from the averages, all influent and effluent data from that day shall also be excluded. All data exclusions shall be noted in the final report.

8.6.1.3 In the event that a catastrophic site problem not described in this Standard including, but not limited to, influent characteristics (including influent total coliform or \textit{E. coli} results exceeding the single sample maximum values during testing under Section 8.1), malfunctions of test apparatus, and acts of nature, jeopardizes the validity of the performance testing and evaluation, manufacturers shall be given the choice to:

--- perform maintenance on the system, reinitiate system start-up procedures, and restart the performance testing and evaluation; or

--- with no routine maintenance performed, have the system brought back to pre-existing conditions and resume testing within 3 wk (21 d) after the site problem has been identified and corrected. Data collected during the system recovery period shall be excluded from averages of effluent measurements.

Pre-existing conditions shall be defined as the point when the results of three consecutive data days are within 15% of the previous 30-day average(s).

8.6.1.4 During the design loading sequence, a minimum of \(\frac{2}{3}\) of the total scheduled data days shall be necessary for the test to be considered valid. When the minimum number of data days is not met, additional sampling days shall be added to the normal required test period until the \(\frac{2}{3}\) minimum is met. When adding
additional sample days is not enough or not possible, the test shall be extended until the 2/3 minimum has been met.

8.6.1.5 During the stress loading sequence (Sections 8.1.2.2.2 and 8.2.2.2.2), a minimum of 2/3 of the total scheduled data days and from at least one of the scheduled data days during any single stress recovery shall be necessary for the test to be considered valid. When the minimum number of data days is not met during stress loading and recovery, individual stress events (including stress recovery) shall be repeated until these minimum requirements have been met. When selecting which stress events to repeat, the event with the fewest number of valid data days shall be selected first, followed by the events with the next fewest number of valid data days until minimum requirements for number of valid samples have been met.

8.6.1.6 A 30-day average or 30-day geo mean average discharge value shall consist of a minimum of 50% of the regularly scheduled sampling days per month. If a 30-day period contains less than the required number of data days, it is permissible to transfer sufficient data days from the preceding 30-day period to constitute a 30-day average or 30-day geo mean discharge value. If there are not sufficient data days available in the preceding 30-day period, it is permissible for the transfer of data days to take place from the following 30-day period to constitute a 30-day average or 30-day geo mean discharge value. No data day shall be included in more than one 30-day average or 30-day geo mean discharge value.

8.6.1.7 When a sample result is less than the detection limit, the detection limit shall be used as the value for the purpose of calculating the 30-day average or 30-day geo mean. When all of the sample results in a 30-day period are less than the detection limit, the 30-day average or 30-day geo mean shall be reported as less than the detection limit.

8.6.1.8 When a system does not discharge at least 50% of its rated daily hydraulic capacity for 5 consecutive days, the system is in malfunction. An assessment shall be conducted to determine the root cause for the discharge failure. Manufacturers shall be given the choice to follow one of the options in 8.6.1.3.