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Joint Committee on Drinking Water Treatment Units

August 22, 2025

Proposed revision to NSF/ANSI 58: *Reverse Osmosis Drinking Water Treatment Systems* (58i114r2)

Revision 2 of NSF/ANSI 58, issue 114 is being forwarded to the Joint Committee for consideration. Please review the proposal and **submit your ballot by September 12, 2025** via the NSF Online Workspace.

Please review all ballot materials. When adding comments, please include the section number applicable to your comment and add all comments under one comment number whenever possible. If you need additional space, please use the attached blank comment template in the reference documents and upload online via the browse function.

Purpose

The purpose of this ballot is to allow an option for testing a membrane in a surrogate system under more challenging conditions (such as 45 psi) upon supplier request.

Background

An issue paper (DWTU-2025-2) noted that NSF/ANSI 58, Section 7.3 “Data transfer protocol (DTP),” requires testing in accordance with Section 6.8 to determine TDS reduction, recovery, and DPR. Section 6.8.6 requires an initial dynamic inlet pressure of 50±3 psi.

Testing at a lower inlet pressure (such as 45 psi) would be more conservative for TDS reduction compared to an inlet pressure of 50±3 psi. While testing is considered worst case, it may result in better TDS reduction ratios, which would allow a membrane supplier to transfer reduction claims to candidate systems.

The revision 1 (r1) ballot received 22 affirmative votes (81%), 5 negative votes (19%), and 0 abstentions. Commenters noted that more specification was needed for testing membranes in a surrogate system and that wording should be updated to clarify that not only membrane suppliers may use the protocol. This revised r2 ballot addresses these comments.

Please refer to the issue paper and r1 comments and responses under Referenced Items for additional background information.

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

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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 gray highlighting. R2 changes are indicated in yellow highlighting. Rationale statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI 58:

Reverse Osmosis Drinking Water Treatment Systems

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7 Elective performance claims – Test methods

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7.3 Data transfer protocol (DTP)

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7.3.2 Procedure

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7.3.2.1 Protocol limitations (membrane ~~supplier~~)

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7.3.2.2 Protocol limitations (candidate system)

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7.3.2.3 Required testing (membrane ~~supplier~~)

a) ~~The membrane element manufacturer shall supply m~~Membrane elements shall be supplied for testing to open atmosphere and for testing in a surrogate system. The surrogate system shall be a typical POU system and shall utilize an automatic shutoff valve and pressurized storage tank.

b) The membrane elements in the surrogate system shall be tested in accordance with Section 6.8 to determine TDS reduction, recovery, and DPR. Testing of the membrane in a surrogate system under more challenging conditions with the inlet pressure at 45 + 3 psi is acceptable, if requested ~~by the supplier~~.

c) TDS reduction and DPR shall be tested with the system outlet open to atmosphere during Days 1 and 7 of the surrogate system testing. The TDS samples shall be taken at the end of the recovery test on Days 1 and 7. The DPR open to atmosphere shall be calculated from data collected during the recovery tests on Days 1 and 7.

   During the procedure for collecting open-to-atmosphere samples, the low flow of permeate from the membrane results in samples that reflect permeate that would be generated during normal closed spigot operation. The open discharge shall be operated long enough to ensure that all sumps and plumbing components have been cleared of all previous permeate. A minimum of five times the unit void volume of any internal component between the membrane element and the sample collection point shall be flushed from the system before collecting open to atmosphere samples.

d) The membrane elements in the surrogate system shall be tested in accordance with Section 6.8 to any of the allowed contaminants listed in Section 7.3.1 of the DTP.

e) Testing of units under Section 7.3.2.3.b and c shall be performed on the same units. Testing of units under Section 7.3.2.3.d may be performed on other identical surrogate systems.

7.3.2.4 Required testing (candidate system)

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7.3.2.5 Data comparison (membrane ~~supplier~~)

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Rationale:

- ***Adds language for testing a membrane in a surrogate system under more challenging conditions upon request.***
- ***Clarifies language to not limit the application of the Data Transfer Protocol to membrane suppliers***