ERRATA ISSUED

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American Nuclear Society

REAFFIRMED

May 26, 2016

ANSI/ANS-56.8-2002 (R2016)

containment system leakage testing requirements

an American National Standard

This standard has been reviewed and reaffirmed with the recognition that it may reference other standards and documents that may have been superseded or withdrawn. The requirements of this document will be met by using the version of the standards and documents referenced herein. It is the responsibility of the user to review each of the references and to determine whether the use of the original references or more recent versions is appropriate for the facility. Variations from the standards and documents referenced in this standard should be evaluated and documented.
This standard does not necessarily reflect recent industry initiatives for risk informed decision-making or a graded approach to quality assurance. Users should consider the use of these industry initiatives in the application of this standard.

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ANSI/ANS-56.8-2002

ERRATA

ANSI/ANS-56.8-2002 (R2016)
Containment System Leakage Testing Requirements

Several typographical errors were identified in Appendix F, Termination Limit Criteria. The errors and corrections are as follows:

The column headings and rows 1-5 of Table F.1, Sample problem, on page 32 read as follow:

Data point	**Time** (h)	**Mass** (lbm)	**MP UCL** (%/day)	**G2.1 Limit (<1)**	**G2.2 Limit (>0)**	**G2.3 Limit (<1)**	**G3 Limit (>1)**
1	00:00	173825.2857	[a]	[a]	[a]	[a]	0.0000
2	00:15	173814.0484	[a]	[a]	[a]	[a]	1.0000
3	00:30	173813.8596	1.7956	-0.1153[b]	[a]	[a]	0.8102
4	00:45	173817.0412	0.5153	0.0881[b]	56.8316	463.8451	0.5177
5	01:00	173813.5221	0.2913		21.3352	151.5345	0.7347

The correction is provided below:

Data point	**Time** (h)	**Mass** (lbm)	**MP UCL** (%/day)	**F2.1 Limit (<1)**	**F2.2 Limit (>0)**	**F2.3 Limit (<1)**	**F3 Limit (>1)**
1	00:00	173825.2857	[a]	[a]	[a]	[a]	0.0000
2	00:15	173814.0484	[a]	[a]	[a]	[a]	1.0000
3	00:30	173813.8596	1.7956	[a]	[a]	[a]	0.8102
4	00:45	173817.0412	0.5153	0.1153[b]	56.8316	463.8451	0.5177
5	01:00	173813.5221	0.2913	0.0881[b]	21.3352	151.5345	0.7347

Equation (F.8) on page 33 reads as follows:

$$F = \frac{(B' - B)\sum W_i + (A - A')\sum t_i W_i + C'\sum t_i^2 W_i}{\sum W_i^2 - B'\sum W_i - A'\sum t_i W_i - C'\sum t_i^2 W_i}\,(n-3)\,.$$

The correction is provided below:

$$F = \frac{(B' - B)\sum W_i + (A' - A)\sum W_i\, t_i + C'\sum W_i\, t_i^2}{\sum W_i^2 - B' W_i - A'\sum W_i\, t_i - C'\sum W_i\, t_i^2}\,(n-3)\,.$$

April 16, 2018

ANSI/ANS-56.8-2002

American National Standard Containment System Leakage Testing Requirements

Secretariat
American Nuclear Society

Prepared by the
American Nuclear Society
Standards Committee
Working Group ANS-56.8

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American National Standard

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This standard was developed under procedures of the Standards Committee of the American Nuclear Society; these procedures are accredited by the American National Standards Institute, Inc., as meeting the criteria for American National Standards. The consensus committee that approved the standard was balanced to ensure that competent, concerned, and varied interests have had an opportunity to participate.

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The American Nuclear Society accepts no responsibility for interpretations of this standard made by any individual or by any ad hoc group of individuals. Requests for interpretation should be sent to the Standards Department at Society Headquarters. Action will be taken to provide appropriate response in accordance with established procedures that ensure consensus on the interpretation.

Comments on this standard are encouraged and should be sent to Society Headquarters.

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Foreword

(This foreword is not part of American National Standard for Containment System Leakage Testing Requirements, ANSI/ANS-56.8-2002.)

This standard provides a basis for determining leakage rates through the primary reactor containment systems of light-water-cooled nuclear power plants. This revision is intended for use with Option B of 10 CFR 50, Appendix J, and is not suitable for use with Option A of Appendix J.

The leakage rate tests performed on the primary reactor containment system simulate some of the conditions (e.g., penetrations vented, flooded, or in operation) that exist during a design-basis accident. The test methodology and the associated requirements for both whole containment (integrated) and individual pathway (local) leakage rate testing are contained in this document.

The appendices contain Type A and verification test methods, formula derivations, containment atmosphere stabilization criteria, and test termination criteria.

The regulatory requirements for containment leakage rate testing are contained in Title 10, "Energy," Code of Federal Regulations (CFR), Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix J, "Primary Reactor Containment Leakage Testing For Water-Cooled Power Reactors."

The previous revision to this standard was issued in 1994. 10 CFR 50, Appendix J, underwent a major revision in 1995. The content of 10 CFR 50, Appendix J, as it was before the revision, was retained in the new revision; only now it is known as "Option A—Prescriptive Requirements." The revision also added a second option, "Option B—Performance-Based Requirements," which contains risk-informed, performance-based requirements for containment leakage rate testing. The most significant changes embodied in Option B allow much longer intervals between tests, based on good performance of the structure or component being tested.

The U.S. Nuclear Regulatory Commission has also issued Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, to provide guidance on complying with Option B of 10 CFR 50, Appendix J. Regulatory Guide 1.163 endorses, with several exceptions, NEI 94-01, "Industry Guideline For Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 0, which in turn endorses the 1994 edition of this standard, with certain changes due to the nonperformance-based nature of the 1994 standard.

This revision of the standard has been written to consolidate into one document guidelines for testing under Option B. This will eliminate the need to refer to three separate documents (Regulatory Guide 1.163, NEI 94-01, and ANSI/ANS-56.8-1994) and the attendant inefficiency and confusion such a situation can cause. Option B requires a reference in each plant's Technical Specifications to the implementation document used to develop the leakage testing program; this revision to the standard has been written so that it may be referenced in Technical Specifications as the implementation document rather than Regulatory Guide 1.163 and its chain of subordinate documents.

Working Group ANS-56.8 of the Standards Committee of the American Nuclear Society had the following membership at the time it approved this standard:

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