ANSI/ANS-18.1-2020

Radioactive Source Term for Normal Operation of Light Water Reactors

An American National Standard

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American Nuclear Society
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American National Standard Radioactive Source Term for Normal Operation of Light Water Reactors

Secretariat
American Nuclear Society

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Group ANS-18.1

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American National Standard

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American Nuclear Society
ATTN: Standards
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La Grange Park, IL 60526

or standards@ans.org

Foreword

(This foreword does not contain any requirements of American National Standard, "Radioactive Source Term for Normal Operation of Light Water Reactors," ANSI/ANS-18.1-2020, but is included for informational purposes.)

The purpose of this standard is to provide a set of typical radionuclide concentrations for estimating the radioactivity in the principal fluid streams of a light water reactor. Some systems will have different concentrations than those indicated in this standard. The values in this standard were those judged to be representative concentrations in a light water reactor over its lifetime based upon the data currently available. It is not intended that these data be used as the sole basis for design but be used in environmental reports and elsewhere where expected operating conditions over the life of the plant would be appropriate. The data and methodology provided by previous versions of this standard have been incorporated in the GALE computer codes (see Bibliography) used for the calculation of gaseous and liquid effluents from light water reactors. The changes included in this standard should be considered in future updates of these codes.

This standard is Revision 4 of American National Standard N237-1976 (ANS-18.1-1976), "Source Term Specification." This revision was issued solely to correct errors identified in ANS-18.1-2016 (Revision 3) deemed substantive. Revision 3 updated the default activity concentrations and adjustment factors associated with Revision 2 (ANS-18.1-1999) based on the latest review of data from operating domestic nuclear power plants as documented in EPRI Technical Document 3002009584, "Technical Bases for Update of the ANSI/ANS-18.1-1999 Standard to Incorporate Contemporary Best-estimate Radiological Source Terms in Principal Fluid Streams of Light Water Reactors" (October 2015). The data in EPRI Technical Document 3002009584 were collected from 1999 to 2015 and include contribution from normal operating events such as fuel leakers, implementation of different chemistry and mitigation strategies, and mid-cycle outages. The values given in this standard will be revised periodically as additional plant operating data become available

This standard might reference documents and other standards that have been superseded or withdrawn at the time this standard is applied. A statement has been included in the references section that provides guidance on the use of references.

This standard does not incorporate the concepts of generating risk-informed insights, performance-based requirements, or a graded approach to quality assurance. The user is advised that one or more of these techniques could enhance the application of this standard.

This standard was prepared by the ANS-18.1 Working Group of the American Nuclear Society. The following members contributed to this standard:

K. Geelhood (Chair), *Pacific Northwest National Laboratory*

L. Benevides, *U.S. Nuclear Regulatory Commission*
E. Dickson, *U.S. Nuclear Regulatory Commission*
C. Fung Poon, *GE Hitachi Nuclear Energy*
D. Hussey, *Electric Power Research Institute*
M. O'Connor, *Electric Power Research Institute*
M. Shaver, *NuScale Power Inc.*
T. Lloyd, *Westinghouse Electric Company*

The Large Light Water Reactor & Reactor Auxiliary Systems Design Subcommittee, had the following membership at the time of its approval of this standard:

M. French (Chair), *WECTEC*

K. Geelhood, *Pacific Northwest National Laboratory*
E. Johnson-Turnipseed, *Entergy*
M. Linn, *Oak Ridge National Laboratory*
K Welter, *NuScale Power*

The Large Light Water Reactors Consensus Committee had the following membership at the time of its approval of this standard:

M. L. French (Acting Chair), *WECTEC*
W. B. Reuland (Vice Chair), *Individual*

R. E. Becse, *Westinghouse Electric Company LLC*
J. M. Bonfiglio (Observer), *Framatome Inc.*
R. J. Burg, *EPM Inc.*
M. J. Colby, *Global Nuclear Fuel - America*
J. B. Florence, *Nebraska Public Power District*
D. Gardner, *Kairos Power, LLC*
S. W. Gebers, *Quantum Nuclear Services*
J. P. Glover, *Graftel, Inc.*
P. K. Guha, *U.S. Department of Energy*
E. M. Johnson-Turnipseed, *Entergy*
M. A. Linn, *Oak Ridge National Laboratory*
E. M. Lloyd, *Exitech Corporation*
R. Markovich, *Contingency Management Consulting*
T. K. Meneely, *Westinghouse Electric Company, LLC*
C. H. Moseley, Jr., *ASME NQA Liaison*
S. D. Routh, *Bechtel Power Corporation*
R. M. Ruby (Observer), *Individual*
J. C. Saldarini (Observer), *Advanced Reactor Concepts, LLC*
S. L. Stamm, *Individual*

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