American Nuclear Society

design criteria for consolidation of LWR spent fuel

an American National Standard

REAFFIRMED

January 28, 2021
July 7, 2016
July 6, 2006
ANSI/ANS-57.10-1996
(R2021)

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reviewed and reaffirmed with the recognition that it may reference other standards and documents that may have been superseded or withdrawn.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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ERRATA

ANSI/ANS-57.10-1996; R2006
Design Criteria for Consolidation of LWR Spent Fuel

The following typographical errors have been identified in this standard:

Reference [1] ANSI/ANS-57.7-1992 should be ANSI/ANS-57.7-1988; R1997

Reference [3] ANSI/ANS-57.2-1992 should be ANSI/ANS-57.2-1983

Reference [9] ANSI/ANS-8.17-1989 should be ANSI/ANS-8.17-1984; R1997

Please note that subsequent to the issuance of this standard, all three of the above standards were withdrawn. ANSI/ANS-57.7-1988; R1997 and ANSI/ANS-57.2-1983 were administratively withdrawn by the American National Standards Institute for noncompliance of maintenance within the required ten year period following approval. ANSI/ANS-8.17-1984; R1997 was superseded by ANSI/ANS-8.17-2004. The user is advised to review each reference to determine whether it, a more recent version, or a replacement document is the most pertinent for each application. When alternate documents are used, the user is advised to document this decision and its basis.

For future clarification, contact the ANS Standards Administrator at standards@ans.org .

March 2008

American National Standard Design Criteria for Consolidation of LWR Spent Fuel

Secretariat
American Nuclear Society

Prepared by the
American Nuclear Society
Standards Committee
Working Group ANS-57.10

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by the
American National Standards Institute, Inc.

American National Standard

Designation of this document as an American National Standard attests that the principles of openness and due process have been followed in the approval procedure and that a consensus of those directly and materially affected by the standard has been achieved.

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 a part of American National Standard Design Criteria for Consolidation of LWR Spent Fuel, ANSI/ANS-57.10-1996.)

This standard provides design criteria for the equipment and systems comprising the rod consolidation process for commercial light water reactor (LWR) spent fuel assemblies. The criteria are applicable to wet and dry, and horizontal and vertical, consolidation concepts.

The standard does not include storage of the spent nuclear fuel either prior to consolidation or upon completion of the process. There is a section in the standard which identifies interface considerations of the process with the facility or installations in which consolidation will take place.

The rod consolidation process is intended to produce canisters filled with full-length fuel rods that have been removed from spent nuclear fuel. The process removes those components that maintain rod spacing and, thereby, allows the individual fuel rods to be reconfigured into a close packed array. This is intended to result in more efficient spent fuel management.

The standard is intended to be consistent with the requirements of the regulations in Title 10, "Energy," Code of Federal Regulations, Part 50, "Domestic Licensing of Production and Utilization Facilities," and Part 72, "Licensing Requirements for the Storage of Spent Fuel in an Independent Spent Fuel Storage Installation (ISFSI)."

The revision was part of periodic, routine maintenance. It includes updated references and clarifications.

The membership of Working Group ANS-57.10 of the Standards Committee of the American Nuclear Society, during the development of this revision, was as follows:

W. L. Dobson, Chairman, *Performance Technology, Inc.*
C. L. Brown, *Individual*
M. Cunningham, *Battelle Pacific Northwest Laboratories*
P. M. Knoetgen, *Nuclear Assurance Corporation*
R. W. Lambert, *Electric Power Research Institute*
R. L. Moscardini, *UST&D, Inc.*
R. W. Rasmussen, *Duke Power Company*
F. C. Sturz, *U.S. Nuclear Regulatory Commission*
J. Theroux, *ABB/Combustion Engineering*
G. A. Townes, *BE, Inc.*

Also contributing directly to the development of this revision by providing text, review, and comment was:

G. Garner, *B&W Fuel Company*

The American Nuclear Society's Nuclear Power Plant Standards Committee (NUPPSCO) had the following membership at the time of its approval of this standard:

W. H. D'Ardenne, Chairman
M. D. Weber, Secretary

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