



# Auxiliary Feedwater System for Pressurized Water Reactors

An American National Standard

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**American National Standard  
Auxiliary Feedwater  
System for Pressurized  
Water Reactors**

Secretariat  
**American Nuclear Society**

Prepared by the  
**American Nuclear Society  
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Working Group ANS-51.10**

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## Foreword

(This foreword does not contain any requirements of American National Standard “Auxiliary Feedwater System for Pressurized Water Reactors,” ANSI/ANS-51.10-2020, but is included for informational purposes.)

This standard is applicable to pressurized light water reactor nuclear power plants using auxiliary feedwater for emergency applications. Plants that rely on passive safety systems independent of the alternating-current (ac) power system are not considered in the scope of this standard.

ANS-51.10 was originally issued in 1979 and has been extensively updated to reflect current regulatory directives, industry practice and experience, and available design guidance.

Among the major changes incorporated in the 1991 revision of ANS-51.10 was station blackout (i.e., the loss of all ac power sources). A requirement was included that the system be capable of operating for a plant-specific duration with the loss of all ac power sources. The rationale for this requirement and the method of determining the plant-specific duration are identified in Title 10, *Code of Federal Regulations*, Part 50, Sec. 50.63, “Loss of All Alternating Current Power.” In the 1979 edition of this standard, a generic duration of 2 hours was identified, and no rationale was included.

Major revision for ANSI/ANS-51.10-2020 includes additional clarification on defense-in-depth and diversity of power sources as well as updated references and probabilistic risk assessment language where appropriate.

This standard might reference documents and other standards that have been superseded or withdrawn at the time the standard is applied.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.

The membership of the ANS-51.10 Working Group of the American Nuclear Society during the revision of this standard was as follows:

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