

# American Nuclear Society

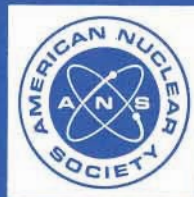
**WITHDRAWN**

October 27, 1997  
ANSI/ANS-59.51-1989

**fuel oil systems for  
emergency diesel generators**

**an American National Standard**

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**ANSI/ANS-59.51-1989**  
**Revision of**  
**ANS-59.51-1976 (N195)**

**American National Standard**  
**Fuel Oil Systems for**  
**Emergency Diesel Generators**

Secretariat  
**American Nuclear Society**

Prepared by the  
**American Nuclear Society**  
**Standards Committee**  
**Working Group ANS-59.51**

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Approved October 27, 1989  
by the  
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## **American National Standard**

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## Foreword

(This Foreword is not a part of American National Standard Fuel Oil Systems for Emergency Diesel Generators, ANSI/ANS-59.51-1989.)

This standard is applicable to light water reactor nuclear power plants and is the first in a series of standards sponsored by the LWR Criteria Management subcommittee (MC-1) intended to cover the design of auxiliary systems that support the operation of emergency diesel generator units. Other standards in this series being developed by this working group are listed below:

Proposed Standard	Subject
ANS-59.52	Lubricating Oil Systems
ANS-59.53	Starting Air Systems
ANS-59.54	Combustion Air Systems
ANS-59.55	Coolant Systems

This standard interfaces with American National Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations, ANSI/IEEE 387-1984. The scope of IEEE 387-1984 includes "The fuel oil system from the fuel oil day tank to the engine, including filters and strainers between the day tank and the engine." However, no fluid system or component performance or design criteria are specified in that standard. To address these fluid system requirements, this revision to ANSI/ANS-59.51 includes in its scope instrumentation and control functions, piping, and piping components between the day tank and the diesel engine terminal connections. Based on discussions with the Working Group chairman for IEEE 387, it was agreed that the intent of IEEE 387 is to address only the overall qualifications and boundaries of the diesel generators auxiliary systems and not the specific performance or design criteria which should be addressed in ANSI/ANS-59.51-1989.

The purpose of this standard and the related standards under development is to provide guidance to nuclear plant owners, designers, manufacturers, regulatory authorities, and operators in the design of reliable onsite power systems. The reliability of the fuel oil system shall be considered when satisfying the overall reliability requirements of the diesel generator units. This is especially important if fuel oil systems have components that are shared between reactor units, where consideration is given to the application of the single failure criterion.

This standard was initially approved and issued by the American Nuclear Society in April 1976 and has been completely revised to conform to American Nuclear Society Nuclear Power Plant Standards Committee (NUPPSCO) Policy 2.5, "Format Guide for Systems Criteria Standards." Also, this standard has been revised to conform to the latest revisions of American National Standards Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants, ANSI/ANS-51.1-1983 (R1988) and Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants, ANSI/ANS-52.1-1983 (R1988) and to resolve comments from previous ballots issued in 1982 for reaffirmation, in 1985 for withdrawal and in 1986 for reaffirmation. The NRC's proposed "station blackout" rule that appeared in the Federal Register/Vol. 51, No. 55/Friday, March 21, 1986 has also contributed to a renewed interest in this standard.

U.S. Nuclear Regulatory Commission, Regulatory Guide 1.137, "Fuel-Oil Systems for Standby Diesel Generators," endorsed ANSI N195-1976/ANS-59.51 as providing an acceptable method for complying with the pertinent requirements of General Design Criterion 17 of Appendix A to 10CFR Part 50, subject to some clarifications and additional requirements. This revision has considered and incorporated where appropriate these clarifications and additional requirements.

This revision to the standard has been prepared by Working Group ANS-59.51 of the American Nuclear Society, which was reformed in 1986 and had the following membership as of 1989:

R. E. Fortier, Chairman, <i>Stone &amp; Webster Engineering Corporation</i>	C. L. Ray, Jr., <i>Duke Power Company</i>
W. J. McFarland, <i>Philadelphia Electric Company</i>	E. B. Tomlinson, <i>U.S. Nuclear Regulatory Commission</i>
S. M. Peterson, <i>Cooper Nuclear Station</i>	N. A. Traeger, <i>Colt Industries - Fairbanks Morse Engine Division</i>

ANS-59.51 had been under the management of ANS-30, ANS-50, and ANS-3 subcommittees. In 1985, this standard was placed under the management of MC-1 subcommittee. It was under MC-1 that a working group was reformed in 1986 to prepare this revision.

MC-1, LWR Criteria Management Committee, had the following membership at the time of the standard's approval:

W. H. D'Ardenne, Chairman, <i>General Electric Company</i>	H. G. O'Brien, <i>Tennessee Valley Authority</i>
E. J. Borella, <i>Ebasco Services, Inc.</i>	H. C. Shaffer III, <i>Yankee Atomic Electric Company</i>
R. Fortier, <i>Stone &amp; Webster Engineering Corporation</i>	D. J. Spellman, <i>Advanced Technology Engineering Systems, Inc.</i>
J. C. Glynn, <i>U.S. Nuclear Regulatory Commission</i>	R. C. Surman, <i>Westinghouse Electric Corporation</i>
P. Hepner, <i>Combustion Engineering, Inc.</i>	E. W. Swanson, <i>Babcock &amp; Wilcox Company</i>
D. G. Keith, <i>Bechtel Power Corporation</i>	
S. A. Nass, <i>Duquesne Light Company</i>	

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

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M. D. Weber, Secretary

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C. D. Thomas	Yankee Atomic Electric Company
W. T. Ullrich	Philadelphia Electric Company
G. P. Wagner	Commonwealth Edison Company
G. L. Wessman	Consultant
G. J. Wrobel	Rochester Gas & Electric Corporation

\*Affiliation at time of balloting

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