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WITHDRAWN

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auxiliary feedwater system for pressurized water reactors

an American National Standard

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American National Standard for Auxiliary Feedwater System for Pressurized Water Reactors

Secretariat
American Nuclear Society

Prepared by the
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Standards Committee
Working Group ANS-51.10

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Foreword

(This Foreword is not a part of American National Standard for Auxiliary Feedwater System for Pressurized Water Reactors, ANSI/ANS-51.10-1979.)

ANS-51, the PWR management group for ANS-50, Power Reactor Systems Subcommittee, formed working group ANS-51.10 to develop a standard for auxiliary feedwater systems because of the safety importance of these systems to pressurized water reactor plants. This standard sets forth design bases, performance requirements, design criteria, testing requirements, and interfaces for the safety-related portion of the auxiliary feedwater system. ANS-51.10 began work on the standard in 1975.

The requirement for diversity of power sources for the pumps - that one power source be independent of AC power - received a great deal of attention. The concern was that this requirement could become a generic one applicable to all safety-related systems. A probabilistic argument can be made to justify the applicability of this requirement to the auxiliary feedwater system which is required during the initial stages of any shutdown and the non-applicability of this requirement to other safety-related systems which are not required for the loss of all AC power. It became apparent that it would be difficult to obtain approval of the standard with this rationale included. Therefore, the requirement is given with no rationale but with a footnote pointing out that this is an NRC regulatory position.

The requirement is included that the system be capable of operating for two hours with the loss of all AC power. The working group feels that this requirement can be justified based on the low probability of losing offsite power and both diesel generators for longer than two hours. Again, no rationale is included in the standard.

The standard does allow a two-pump safety-related auxiliary feedwater system. However, if two safety-related pumps are used then a third non-safety-related pump must be provided for use during startup, hot standby, and shutdown in order to meet the NRC postion on high energy line breaks.

The requirements of ANS-51.4, "Criteria for Safety-Related Operator Actions," were used to develop the instrumentation and control requirements of this standard. References to the trial use draft of this proposed standard can be found in Appendix A.

The membership of Working Group ANS-51.10 of the Standards Committee of the American Nuclear Society during its development of this document was:

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