

American National Standard

REAFFIRMED

October 26, 1982

ANSI/ANS-14.1

ANSI N394-1975;R1982

REAFFIRMED

April 11, 1989

ANSI/ANS-14.1

ANSI N394-1975;R1982;
R1989

REAFFIRMED

May 3, 2000

ANSI/ANS-14.1

ANSI N394-1975;R1982;
R1989;R2000

tion of fast
se reactors

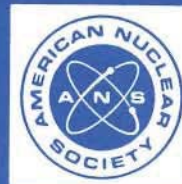
WITHDRAWN

April 23, 2004

ANSI/ANS-14.1

ANSI N394-1975 (R2000)

No longer being maintained as an American National Standard. This standard may contain outdated material or may have been superseded by another standard. Please contact the ANS Standards Administrator for details.



published by the
American Nuclear Society
244 East Ogden Avenue
Hinsdale, Illinois 60521, USA

American National Standard
Operation of Fast Pulse Reactors

Secretariat
American Nuclear Society

Prepared by the
American Nuclear Society
Standards Committee
Working Group ANS-14.1

Published by the
American Nuclear Society
244 East Ogden Avenue
Hinsdale, Illinois 60521

Approved January 22, 1975
by the
American National Standards Institute, Inc.

American National Standard

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether he has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review and users are cautioned to obtain the latest editions.

CAUTION NOTICE: This American National Standard may be reviewed or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of this standard may receive current information, including interpretation, on all standards published by the American Nuclear Society by calling or writing to the Society.

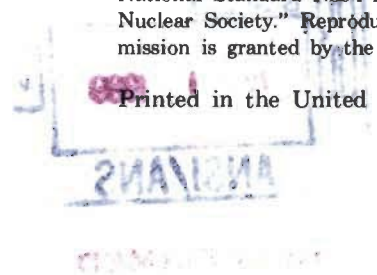
Published by

**American Nuclear Society
244 East Ogden Avenue, Hinsdale, Illinois 60521**

Copyright © 1975 by American Nuclear Society. Price: \$7.50.

Any part of this standard may be quoted. Credit lines should read "Extracted from American National Standard N394-1975 (ANS-14.1) with permission of the publisher, the American Nuclear Society." Reproduction prohibited under copyright convention unless written permission is granted by the American Nuclear Society.

Printed in the United States of America



Foreword

(This Foreword is not part of American National Standard Operation of Fast Pulse Reactors N394-1975/ANS-14.1)

Nuclear devices designed and operated for purposes of research and as sources of sharp, intense pulses of fission-produced radiation have functioned successfully for more than a score of years. In the usual operation, super-prompt criticality is established in a mass of unmoderated fissile metal, radiation is produced, and the nuclear reaction is immediately terminated by characteristics inherent in the fissile material itself. These devices have come to be known as fast pulse reactors. This standard provides direction in the use of such specialties so that the risk of damage to personnel and equipment can be minimized. It was prepared by individuals having extensive and intimate experience in the operation of this type of reactor.

Three drafts of the standard were prepared by Subcommittee 14 of the Standards Committee of the American Nuclear Society. The third draft was approved unanimously by letter ballot of the Subcommittee in April 1971. Revisions to that draft were issued in May 1972 and March 1974. At the time of the final issuance, the membership of the Subcommittee was:

A. De La Paz, Chairman, *White Sands Missile Range*
L. M. Bonson, *Sandia Laboratories*
K. Elliot, *Albuquerque Operations Office, U.S.*
Atomic Energy Commission
L. P. Holland, *Oak Ridge National Laboratory*

A. H. Kazi, *Aberdeen Pulse Radiation Facility*
R. L. Long, *University of New Mexico*
J. M. Reuscher, *Sandia Laboratories*
T. F. Wimett, *Los Alamos Scientific Laboratory*

Comments should be directed to:

Mr. Armando De La Paz
Nuclear Weapon Effects Division
White Sands Missile Range, New Mexico 88002.

The American National Standards Committee N17, Research Reactors, Reactor Physics and Radiation Shielding, which reviewed and approved this standard in 1973, had the following membership:

W. L. Whittemore, Chairman
R. S. Carter, Secretary

<i>Organization Represented</i>	<i>Name of Representative</i>
American College of Radiology	M. M. Ter Pogossian
American Institute of Chemical Engineers	R. Duffy
American Nuclear Society	W. L. Whittemore
American Physical Society	W. W. Havens, Jr. H. Goldstein (Alt.)
American Public Health Association	C. G. Amato W. A. Holt (Alt.)
American Society of Mechanical Engineers	R. A. Axford
American Society of Radiologic Technologists	J. H. Tolan
Health Physics Society	C. A. Willis
Institute of Electrical & Electronics Engineers	H. A. Thomas
National Bureau of Standards	R. S. Carter
National Council on Radiation Protection and Measurements	A. B. Chilton
Society of Nuclear Medicine	(M. Glos)
U.S. Atomic Energy Commission (Regulatory)	Karl R. Goller R. J. Schemel (Alt.)
U.S. Atomic Energy Commission (General Manager's Office)	P. B. Hemmig J. W. Lewellen (Alt.)
Individual Members	J. E. Olhoft A. M. Perry E. A. Warman

Contents

Section	Page
1.0 Scope	1
2.0 Definitions	1
2.1 Limitations	1
2.2 Glossary of Terms.....	1
3.0 Administrative Procedures.....	1
4.0 Facility Layout	2
5.0 Reactor Characteristics.....	2
6.0 Equipment Criteria	2
7.0 Operating Procedures	3