# **American Nuclear Society**

facilities and medical care for onsite nuclear power plant radiological emergencies

### an American National Standard

### **WITHDRAWN**

October 7, 2005 ANSI/ANS-3.7.1-1995 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 This standard may contain outdated material or may have been superseded by another standard.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

555 North Kensington Avenue

La Grange Park, Illinois 60525 USA

American National Standard Facilities and Medical Care for Onsite Nuclear Power Plant Radiological Emergencies

Secretariat
American Nuclear Society

Prepared by the American Nuclear Society Standards Committee Working Group ANS-3.7

Published by the American Nuclear Society 555 North Kensington Avenue La Grange Park, Illinois 60526 USA

Approved December 19, 1995 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.

An American National Standard is intended to aid industry, consumers, governmental agencies, and general interest groups. Its use is entirely voluntary. The existence of an American National Standard, in and of itself, does not preclude anyone from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard.

By publication of this standard, the American Nuclear Society does not insure anyone utilizing the standard against liability allegedly arising from or after its use. The content of this standard reflects acceptable practice at the time of its approval and publication. Changes, if any, occurring through developments in the state of the art, may be considered at the time that the standard is subjected to periodic review. It may be reaffirmed, revised, or withdrawn at any time in accordance with established procedures. Users of this standard are cautioned to determine the validity of copies in their possession and to establish that they are of the latest issue.

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.

Published by

American Nuclear Society 555 North Kensington Avenue La Grange Park, Illinois 60526 USA

Copyright © 1995 by American Nuclear Society. All rights reserved.

Any part of this standard may be quoted. Credit lines should read "Extracted from American National Standard ANSI/ANS-3.7.1-1995 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 Facilities and Medical Care for Onsite Nuclear Power Plant Radiological Emergencies, ANSI/ANS-3.7.1-1995)

The operation of a nuclear power plant introduces the potential for medical emergencies that involve the exposure of personnel to radiation or radioactive material contamination, either externally or internally. It is important in such an event to have adequate first aid and medical facilities, supplies, equipment, transportation capabilities, and trained personnel available to provide care for these persons. The care initiated onsite continues until the patient is treated and released, transferred to a local hospital, or referred to another, possibly distant, medical center for definitive care.

This revision includes more detailed criteria for equipment and supplies required for a medical emergency response inside the nuclear power plant. The concept of the local standard of care, as the level of care to be provided, has been introduced. Additional criteria—for equipment, supplies, and patient handling techniques at the hospital—are included.

Criteria are also provided for a definitive care hospital. Definitive care, if needed, might require the services of an advanced medical center or a specialized definitive care facility. Although specialized care is beyond the scope of this standard, a brief discussion of specialized care is provided in the Appendix to assist in planning efforts.

This standard does not include criteria for the management of injury or illness without radiological concerns; criteria to judge the quality of the treatment at any facility or location; response for hazardous-waste contamination; nor criteria for proper radiation protection practices that may have prevented or mitigated the radiological complications in a medical emergency. Other concerns beyond the scope of this standard are non-power production uses of radiation or radioactive material. Examples of such areas include the medical administration of radionuclides, accelerator facilities, research laboratories, fuel fabrication and reprocessing, and medical care associated with nuclear weapons and warfare.

Although elements of this standard might be useful to hospital administrators and government agencies, it is not intended to provide comprehensive criteria for the development of local and state disaster plans for the health and safety of the public. The circumstances under which medical attention would be required for offsite victims of a radiological incident should be determined with criteria provided by the state or local government public health officer in consultation with federal health authorities, private physicians, and hospitals.

The level of care beyond first aid provided at the power plant is a managerial prerogative and is not specified in this standard. In instances where specific facilities have been provided at a designated local hospital, there might be less of a need for an extensive first aid facility onsite. Although this standard does not provide criteria as to who is responsible for providing specific medical care functions, both onsite and offsite, it is essential that these responsibilities be clearly defined in the emergency plan.

The American Nuclear Society Working Group 3.7.1 had the following members at the time this standard was processed and approved:

C.D. Pond, Acting Chairman, Tennessee Valley Authority D.M. Barss, U.S. Nuclear Regulatory Commission G.R. Holeman, CHP, Brookhaven National Laboratory F.Mettler, Jr., MD, University of New Mexico D.W. Miller, PhD, CHP, Illinois Power Company R.G. Piccola, CHP, University of Virginia S. Porter, Jr., CHP, Porter Consultants

The membership of Subcommittee ANS-3 at the time of its approval of this standard was as follows:

L.E. Davis, Chairman, Commonwealth Edison Company C.K. Brown, Southern Nuclear Operating Company F. Dougherty, Tenera, L.P. C. Eldridge, Pacific Gas & Electric Company S. Floyd, Nuclear Energy Institute C.H. Moseley, Jr., Performance Development Corporation C.D. Pond, Tennessee Valley Authority S.M. Quennoz, Portland General Electric Company S. Richards, U.S. Nuclear Regulatory Commission D.R. Roth, Jupiter Corporation W.J. Rudolph, Quality Applications G.R. Scholand, Consultant R.N. Smith, Argonne National Laboratory-West W.T. Ullrich, Consultant P. Walzer, Public Service Electric & Gas Company M.J. Wright, Entergy Operations, Inc.

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

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

R.E. Allen UE&C Nuclear
(for the Institute of Electrical and Electronics Engineers, Inc.)
P.L. Ballinger
F. Boorboor
J.C. Bradford Bechtel Power Corporation
R.H. Bryan, Jr. Tennessee Valley Authority
T.W.T. Burnett
J.D. Cohen Westinghouse Savannah River Company
J.B. Cotton
W.H. D'Ardenne DAE Enterprises
(for the American Nuclear Society)
L.E. Davis
M. Drouin U.S. Nuclear Regulatory Commission
P.H. Hepner
R.A. Hill G.E. Nuclear Energy
J.T. Luke Florida Power & Light Company
J.F. Mallay Liberty Consulting Group
C.H. Moseley, Jr. Performance Development Corporation
J.A. Nevshemal Raytheon UE&C
W.N. Prillaman
W.C. Ramsey, Jr. Southern Company Services, Inc.
W.B. Reuland
R.F. Sacramo Halliburton NUS Corporation
J.C. Saldarini
J. Savy
R.E. Scott Scott Enterprises
D.J. Spellman Oak Ridge National Laboratory
S.L. Stamm
J.D. Stevenson & Associates
C.D. Thomas, Jr. Yankee Atomic Electric Company
G.P. Wagner
N. Weber
G.J. Wrobel

Contents	Section Page	;
	1. Introduction       1         1.1 Scope       1         1.2 Purpose       1	L
	2. Definitions	
	3. Facilities and Equipment       2         3.1 Onsite       2         3.1.1 First Aid       2         3.1.2 Radiological Assessment       2         3.1.3 Decontamination       2         3.2 Offsite       2         3.2.1 Medical Transport       2         3.2.2 Hospital Care       3	
	4. Emergency Response Planning       4         4.1 Onsite Response       4         4.2 Patient Handling       5         4.3 Offsite Medical Care       5         4.3.1 Coordination of Care       5         4.3.2 Initial Patient Arrival       5         4.3.3 Radiological Assessment       6         4.3.4 Decontamination       7	1
	5. Ancillary Activities       7         5.1 Communications       7         5.2 Training       7         5.3 Documentation       8         5.4 Public Information       8	7
	Appendix	
	Definitive Care9	)