



**American Water Works
Association**

The Authoritative Resource on Safe Water®

ANSI/AWWA G200-09
(Revision of ANSI/AWWA G200-04)

AWWA Standard

Distribution Systems Operation and Management



Effective date: April 1, 2010.

First edition approved by AWWA Board of Directors Jan. 18, 2004.

This edition approved June 14, 2009.

Approved by American National Standards Institute Feb. 5, 2010.

6666 West Quincy Avenue
Denver, CO 80235-3098
T 800.926.7337
www.awwa.org

Advocacy
Communications
Conferences
Education and Training
Science and Technology
Sections



Documents
Document Sharing Hub

Copyright © 2010 American Water Works Association. All Rights Reserved.

AWWA Standard

This document is an American Water Works Association (AWWA) standard. It is not a specification. AWWA standards describe minimum requirements and do not contain all of the engineering and administrative information normally contained in specifications. The AWWA standards usually contain options that must be evaluated by the user of the standard. Until each optional feature is specified by the user, the product or service is not fully defined. AWWA publication of a standard does not constitute endorsement of any product or product type, nor does AWWA test, certify, or approve any product. The use of AWWA standards is entirely voluntary. This standard does not supersede or take precedence over or displace any applicable law, regulation, or codes of any governmental authority. AWWA standards are intended to represent a consensus of the water supply industry that the product described will provide satisfactory service. When AWWA revises or withdraws this standard, an official notice of action will be placed on the first page of the classified advertising section of *Journal AWWA*. The action becomes effective on the first day of the month following the month of *Journal AWWA* publication of the official notice.

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 that person 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. Producers of goods made in conformity with an American National Standard are encouraged to state on their own responsibility in advertising and promotional materials or on tags or labels that the goods are produced in conformity with particular American National Standards.

CAUTION NOTICE: The American National Standards Institute (ANSI) approval date on the front cover of this standard indicates completion of the ANSI approval process. This American National Standard may be revised or withdrawn at any time. ANSI procedures require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036; (212) 642-4900, or emailing info@ansi.org.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information or retrieval system, except in the form of brief excerpts or quotations for review purposes, without the written permission of the publisher.

Copyright © 2010 by American Water Works Association
Printed in USA

Committee Personnel

The AWWA Standards Committee on Distribution Systems, which reviewed and approved this standard, had the following personnel at the time of approval:

Kanwal Oberoi, *Chair*

General Interest Members

M.N. Agbodo, HDR Inc., Riverside, Calif.	(AWWA)
H. Johnson, Camp Dresser & McKee, Alexandria, Va.	(AWWA)
G.J. Kirmeyer, HDR Engineering, Bellevue, Wash.	(AWWA)
K.C. Morgan, City of Phoenix Water Services Department, Phoenix, Ariz.	(AWWA)
S.D. Osborne, Haley & Ward Inc. Civil & Environmental Engineers, Waltham, Mass.	(AWWA)
S.M. Passarelli,* Standards Engineer Liaison, AWWA, Denver, Colo.	(AWWA)

User Members

J.E. Dyksen, United Water, Oradell, N.J.	(AWWA)
W.C. Gedney, Golden State Water Company, Ontario, Calif.	(AWWA)
M.E. Grahek, Los Angeles Department of Water, Los Angeles, Calif.	(AWWA)
C. Morissette, Ville de Montreal, Montreal, Que.	(AWWA)
K. Oberoi, Charleston Water System, Charleston, S.C.	(AWWA)
G. Ramon, City of Phoenix Water Services Department, Phoenix, Ariz.	(AWWA)
D. Spencer, Powdersville Water District, Easley, S.C.	(AWWA)
J.W. Swertfeger, Cincinnati Water Works, Cincinnati, Ohio	(AWWA)

* Liaison, nonvoting

This page intentionally blank.



Contents

All AWWA standards follow the general format indicated subsequently. Some variations from this format may be found in a particular standard.

SEC.	PAGE	SEC.	PAGE
<i>Foreword</i>		2	References 2
I	Introduction vii	3	Definitions 2
I.A	Background vii	4	Requirements
I.B	History viii	4.1	Water Quality 4
I.C	Acceptance viii	4.2	Distribution System Management Programs 9
II	Special Issues ix	4.3	Facility Operations and Maintenance 12
II.A	Advisory Information on Application of Standards ix	5	Verification
III	Use of This Standard ix	5.1	Documentation Required 14
III.A	Options and Alternatives ix	5.2	Human Resources 16
III.B	Modification to Standard ix	6	Delivery
IV	Major Revisions ix	6.1	Self-Assessment and Internal Auditing 16
V	Comments x	<i>Appendix</i>	
<i>Standard</i>		A	Bibliography 17
1	General		
1.1	Scope 1		
1.2	Purpose 1		
1.3	Application 1		

This page intentionally blank.



Foreword

This foreword is for information only and is not a part of ANSI^{*}/AWWA G200.

I. Introduction.

I.A. *Background.* The AWWA standards program is designed to serve water and wastewater utilities, their customers, owners, service providers, and government regulators. The standards developed under the program are generally intended to improve a utility's overall operations and service. The use of standards establishes uniform performance measures and promotes industry self-regulation. Within the standards program is a specific effort to establish formal management and operations guidelines. These guidelines identify the appropriate practices, procedures, and behaviors whose implementation will promote effective and efficient utility operations and contribute to protection of public health, public safety, and the environment.

AWWA's standards process has been used for more than ninety years to produce ANSI-accredited standards for materials and processes that are used by the water and wastewater utility industries. These standards are recognized worldwide and have been adopted by many utilities and organizations. Likewise, these performance standards are developed using the same ANSI-recognized formal approval process. Volunteer standards committees establish standard practices in a uniform and appropriate format.

The AWWA Executive Committee and the AWWA Board of Directors approved the vision and conceptual structure for the development of this series of performance standards.

Technical workgroups began the standards development process by identifying best practices for distribution systems operation and management, water treatment, and source water management. Formal standards committees were then formed during the first quarter of 2001 to develop standards for distribution systems operation and management, water treatment plant operations, and source water management. This standard is the outcome of the distribution systems operation and management committee.

AWWA used the work of the earlier technical workgroups and initial management standards to establish a series of utility management standards designed to cover the principal activities of a typical water and/or wastewater utility. Subsequent committees

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

were established to develop additional standards, including topics such as overall utility management, business practices, customer relations and communications, security practices, emergency preparedness, and wastewater operations.

I.B. *History.* The first edition of this standard was approved by the AWWA Board of Directors on Jan. 18, 2004. This second edition was approved June 14, 2009.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF^{*}) to develop voluntary third-party consensus standards and a certification program for direct and indirect drinking water additives. Other members of the original consortium included the American Water Works Association Research Foundation (AwwaRF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.[†] Local agencies may choose to impose requirements more stringent than those required by the state. To evaluate the health effects of products and drinking water additives from such products, state and local agencies may use various references, including

1. An advisory program formerly administered by USEPA, Office of Drinking Water, discontinued on Apr. 7, 1990.
2. Specific policies of the state or local agency.
3. Two standards developed under the direction of NSF, NSF/ANSI 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI 61, Drinking Water System Components—Health Effects.
4. Other references, including AWWA standards, *Food Chemicals Codex*, *Water Chemicals Codex*[‡], and other standards considered appropriate by the state or local agency.

Various certification organizations may be involved in certifying products in accordance with NSF/ANSI 61. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdiction. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

^{*} NSF International, 789 N. Dixboro Road, Ann Arbor, MI 48105.

[†] Persons outside the United States should contact the appropriate authority having jurisdiction.

[‡] Both publications available from National Academy of Sciences, 500 Fifth Street, NW, Washington, DC 20001.

Annex A, “Toxicology Review and Evaluation Procedures,” to NSF/ANSI 61 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of “unregulated contaminants” are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

ANSI/AWWA G200 does not address additives requirements. Thus, users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements, including applicable standards.
2. Determine the status of certifications by parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Advisory Information on Application of Standards.* This standard includes only those requirements that are limited exclusively to the operation and management of the drinking water distribution system. Separate standards will cover utility programs such as safety, emergency preparedness and security, financial management, water treatment, source water protection, and business systems.

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

III.A. *Options and Alternatives.* The following items should be provided by the purchaser.

1. Standard used—that is, ANSI/AWWA G200, Distribution Systems Operation and Management, of latest revision.
2. Whether compliance with NSF/ANSI 61, Drinking Water System Components—Health Effects, is required.

III.B. *Modification to Standard.* Any modification to the provisions, definitions, or terminology in this standard must be provided in the purchaser’s specifications.

IV. Major Revisions. Major changes made to the standard in this revision include the following:

1. Added requirements for valve-exercising program and hydrant maintenance program.
2. Clarified flow requirements and corrective action plan.
3. Added Self-Assessment and Internal Auditing requirements.