ASME B31.8-2022
(Revision of ASME B31.8-2020)

# Gas Transmission and Distribution Piping Systems

## ASME Code for Pressure Piping, B31

AN INTERNATIONAL PIPING CODE®

The American Society of Mechanical Engineers

ASME B31.8-2022
(Revision of ASME B31.8-2020)

# Gas Transmission and Distribution Piping Systems

## ASME Code for Pressure Piping, B31

AN INTERNATIONAL PIPING CODE®

The American Society of Mechanical Engineers

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: December 22, 2022

The next edition of this Code is scheduled for publication in 2024. This Code will become effective 6 months after the Date of Issuance.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Code. Interpretations are published on the Committee web page and under http://go.asme.org/Interpretations. Periodically certain actions of the ASME B31 Committee may be published as Cases. Cases are published on the ASME website under the B31 Committee Page at http://go.asme.org/B31committee as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages of the associated codes and standards to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The B31 Committee Page can be found at http://go.asme.org/B31committee. The associated B31 Committee Pages for each code and standard can be accessed from this main page. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting “Errata” in the “Publication Information” section.



The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

# CONTENTS

**Mandatory Appendices**



**Nonmandatory Appendices**



**Figures**

**Tables**

# FOREWORD

The need for a national code for pressure piping became increasingly evident from 1915 to 1925. To meet this need, the American Engineering Standards Committee [later changed to the American Standards Association, now the American National Standards Institute (ANSI)] initiated Project B31 in March 1926 at the request of the American Society of Mechanical Engineers (ASME) and with the Society as sole sponsor. After several years of work by Sectional Committee B31 and its subcommittees, a first edition was published in 1935 as an American Tentative Standard Code for Pressure Piping.

A revision of the original tentative standard began in 1937. Several more years of effort were given to securing uniformity among sections, eliminating divergent requirements and discrepancies, keeping the Code abreast of current developments in welding technique, calculating stress computations, and including reference to new dimensional and material standards. During this period, a new section on refrigeration piping was prepared in cooperation with the American Society of Refrigeration Engineers and complemented the American Standard Code for Mechanical Refrigeration. This work culminated in the 1942 American Standard Code for Pressure Piping.

Supplements 1 and 2 of the 1942 Code, which appeared in 1944 and 1947, respectively, introduced new dimensional and material standards, a new formula for pipe wall thickness, and more comprehensive requirements for instrument and control piping. Shortly after the 1942 Code was issued, procedures were established for handling inquiries requiring explanation or interpretation of Code requirements and for publishing such inquiries and answers in *Mechanical Engineering* for the information of all concerned.

By 1948, continuing increases in the severity of service conditions combined with the development of new materials and designs to meet these higher requirements warranted more extensive changes in the Code than could be provided from supplements alone. The decision was reached by the American Standards Association and the sponsor to reorganize the sectional committee and its several subcommittees and to invite the various interested bodies to reaffirm their representatives or to designate new ones.

Because of the wide field involved, between 30 and 40 different engineering societies, government bureaus, trade associations, institutes, and similar organizations had one or more representatives on the sectional committee, plus a few members-at-large to represent general interests. Code activities were subdivided according to the scope of the several sections. General direction of Code activities rested with the Standards Committee officers and an executive committee, membership of which consisted principally of Standards Committee officers and section chairmen.

Following its reorganization in 1948, Standards Committee B31 made an intensive review of the 1942 Code that resulted in

*(a)* a general revision and extension of requirements to agree with present-day practice

*(b)* the revision of references to existing dimensional standards and material specifications and the addition of references to the new ones

*(c)* the clarification of ambiguous or conflicting requirements

A revision was presented for letter ballot vote of Standards Committee B31. Following approval by this body, the project was approved by the sponsor organization and by the American Standards Association. It was finally designated as an American Standard, with the designation B31.1-1951, in February 1951.

At its annual meeting on November 29, 1951, Standards Committee B31 authorized the separate publication of a section of the Code for Pressure Piping addressing gas transmission and distribution piping systems, to be completed with the applicable parts of Section 2, Gas and Air Piping Systems; Section 6, Fabrication Details; and Section 7, Materials — Their Specifications and Identification. The purpose was to provide an integrated document for gas transmission and distribution piping that would not require cross-referencing to other sections of the Code.

The first edition of this integrated document, known as American Standard Code for Pressure Piping, Section 8, Gas Transmission and Distribution Piping Systems, was published in 1952 and consisted almost entirely of material taken from Sections 2, 6, and 7 of the 1951 edition of the Pressure Piping Code.

A new section committee was organized in 1952 to update Section 8 as necessary to address modern materials and methods of construction and operation.

After a review by B31 Executive and Standards Committees in 1955, a decision was made to develop and publish industry sections as separate Code documents of the American Standard B31 Code for Pressure Piping. The 1955 edition constituted a general revision of the 1952 edition with a considerably expanded scope. Further experience in the application of the Code resulted in revisions in 1958, 1963, 1966, 1967, 1968, 1969, 1975, and 1982.

In December 1978, the American National Standards Committee B31 was reorganized as the ASME Code for Pressure Piping, B31 Committee. The code designation was also changed to ANSI/ASME B31.

The 1989 edition of the Code was a compilation of the 1986 edition and the subsequent addenda issued to the 1986 edition.

The 1992 edition of the Code was a compilation of the 1989 edition, the subsequent three addenda, and the two special Errata issued to the 1989 edition.

The 1995 edition of the Code was a compilation of the 1992 edition and the subsequent three addenda issued to the 1992 edition.

The 1999 edition of the Code was a compilation of the 1995 edition and the revisions that occurred following the issuance of the 1995 edition.

The 2003 edition of the Code was a compilation of the 1999 edition and revisions that occurred following the issuance of the 1999 edition.

The 2007 edition of the Code was a compilation of the 2003 edition and revisions that occurred following the issuance of the 2003 edition.

The 2010 edition of the Code was a compilation of the 2007 edition and revisions that occurred following the issuance of the 2007 edition.

The 2012 edition of the Code was a compilation of the 2010 edition and revisions that occurred following the issuance of the 2010 edition.

The 2014 edition of the Code was a compilation of the 2012 edition and revisions that occurred following the issuance of the 2012 edition.

The 2016 edition of the Code was a compilation of the 2014 edition and revisions that occurred following the issuance of the 2014 edition.

The 2018 edition of the Code was a compilation of the 2016 edition and revisions that occurred since the issuance of the 2016 edition.

The 2020 edition of the Code was a compilation of the 2018 edition and revisions that occurred since the issuance of the 2018 edition.

The 2022 edition of the Code is a compilation of the 2020 edition and revisions that have occurred since the issuance of the 2020 edition. ASME B31.8-2022 was approved by ANSI on October 17, 2022.

# ASME B31 COMMITTEE
# Code for Pressure Piping

(The following is the roster of the Committee at the time of approval of this Code.)

## STANDARDS COMMITTEE OFFICERS

**C. H. Eskridge, Jr.,** *Chair*
**K. A. Vilminot,** *Vice Chair*
**J. Oh,** *Secretary*

## STANDARDS COMMITTEE PERSONNEL

**D. D. Anderson,** Consultant
**R. J. Appleby,** Consultant
**K. C. Bodenhamer,** TRC Pipeline Services
**R. Bojarczuk,** Retired
**M. R. Braz,** MRBraz and Associates, PLLC
**M. Burkhart,** The Burkhart Group, Inc.
**R. D. Campbell,** Bechtel Energy, Inc.
**J. Caylor,** Caylor Engineering and Associates, PLLC
**J. S. Chin,** Retired
**D. D. Christian,** Victaulic
**R. P. Deubler,** Becht Engineering Co., Inc.
**M. Engelkemier,** Cargill
**C. H. Eskridge, Jr.,** Consultant
**D. J. Fetzner,** Retired
**D. R. Frikken,** Becht Engineering Co., Inc.
**R. A. Grichuk,** S&B Engineers and Contractors, Ltd.
**R. W. Haupt,** Pressure Piping Engineering Associates, Inc.
**G. A. Jolly,** Samshin, Ltd.
**K. B. Kaplan,** Consultant
**W. J. Mauro,** Consultant
**J. E. Meyer,** CDM Smith — Industrial Division
**T. Monday,** Team Industries, Inc.
**J. Oh,** The American Society of Mechanical Engineers
**W. Olson,** Gulf Interstate Engineering
**D. W. Rahoi,** Consultant
**M. Rana,** Consultant
**R. Reamey,** Turner Industries Group, LLC
**M. J. Rosenfeld,** RSI Pipeline Solutions, LLC
**J. T. Schmitz,** Southwest Gas Corp.
**S. K. Sinha,** SOCOTEC Engineering, Inc.
**W. J. Sperko,** Sperko Engineering Services, Inc.
**F. W. Tatar,** Consultant
**K. A. Vilminot,** Commonwealth Associates, Inc.
**P. Flenner,** *Contributing Member,* Flenner Engineering Services
**M. Nayyar,** *Contributing Member,* NICE

## B31.8 EXECUTIVE COMMITTEE

**D. D. Anderson,** *Chair,* Consultant
**P. D. Stumpf,** *Secretary,* The American Society of Mechanical Engineers
**R. J. Appleby,** Consultant
**K. B. Kaplan,** Consultant
**K. G. Leewis,** Leewis and Associates, Inc.
**M. T. Reed,** Consultant
**V. Romero,** Southern California Gas Co.
**M. J. Rosenfeld,** RSI Pipeline Solutions, LLC

## B31.8 GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS SECTION COMMITTEE

**D. D. Anderson,** *Chair,* Consultant
**M. J. Rosenfeld,** *Vice Chair,* RSI Pipeline Solutions, LLC
**P. D. Stumpf,** *Secretary,* The American Society of Mechanical Engineers
**R. J. Appleby,** Consultant
**B. W. Bingham,** T. D. Williamson, Inc.
**P. M. Dickenson,** Tegre Corp.
**S. A. Frehse,** Consultant
**R. W. Gailing,** Consultant
**M. W. Gragg,** ExxonMobil Production Co.
**D. W. Haim,** Consultant
**K. B. Kaplan,** Consultant
**M. Kieba,** U.S. DOT — PHMSA
**R. W. Kivela,** Consultant
**K. G. Leewis,** Leewis and Associates, Inc.
**D. K. Moore,** Trout Hydrodynamics, Inc.
**G. E. Ortega,** Ras Laffan Petrochemicals Project
**M. T. Reed,** Consultant
**V. Romero,** Southern California Gas Co.
**R. A. Schmidt,** Canadoil
**L. C. Thronson,** Tecorp International, PLLC
**F. R. Volgstadt,** Volgstadt and Associates, Inc.
**W. J. Walsh,** EN Engineering
**D. W. Wright,** Wright Tech Services, LLC
**B. Albers,** *Contributing Member,* Fluor
**C. A. Bullock,** *Contributing Member,* Integrity Solutions, Ltd.
**J. S. Chin,** *Contributing Member,* Retired
**A. M. Clarke,** *Contributing Member,* Consultant
**D. J. Fetzner,** *Contributing Member,* Retired
**M. E. Hovis,** *Contributing Member,* Consultant
**M. D. Huston,** *Contributing Member,* Oneok Partners, LP
**M. P. Lamontagne,** *Contributing Member,* Lamontagne Pipeline Assessment Corp.
**M. J. Mechlowicz,** *Contributing Member,* Southern California Gas Co.
**J. Zhou,** *Contributing Member,* TransCanada Pipelines, Ltd.

## B31.8 SUBGROUP ON DESIGN, MATERIALS, AND CONSTRUCTION

**M. J. Rosenfeld,** *Chair,* RSI Pipeline Solutions, LLC
**K. B. Kaplan,** *Vice Chair,* Consultant
**W. J. Walsh,** *Secretary,* EN Engineering
**A. Akmal,** Southern California Gas Co.
**R. J. Appleby,** Consultant
**B. W. Bingham,** T. D. Williamson, Inc.
**J. S. Chin,** Retired
**P. M. Dickinson,** Tegre Corp.
**S. A. Frehse,** Consultant
**R. W. Gailing,** Consultant
**D. W. Haim,** Consultant
**M. Kieba,** U.S. DOT — PHMSA
**J. Mauritz,** WeldFit
**G. E. Ortega,** Ras Laffan Petrochemicals Project
**R. A. Schmidt,** Canadoil
**L. C. Thronson,** Tecorp International, PLLC
**B. Albers,** *Contributing Member,* Fluor
**H. M. Al-Muslim,** *Contributing Member,* Saudi Arabian Oil Company
**M. A. Boring,** *Contributing Member,* DNV GL
**D. Chairez,** *Contributing Member,* Consultant
**A. M. Clarke,** *Contributing Member,* Consultant
**J. W. Fee,** *Contributing Member,* Consultant
**D. J. Fetzner,** *Contributing Member,* Retired
**R. D. Huriaux,** *Contributing Member,* Richard D. Huriaux, P.E., LLC
**M. D. Huston,** *Contributing Member,* Oneok Partners, LP
**M. J. Mechlowicz,** *Contributing Member,* Southern California Gas Co.

## B31.8 SUBGROUP ON DISTRIBUTION

**V. Romero,** *Chair,* Southern California Gas Co.
**B. Tansey,** *Secretary,* American Gas Association
**J. Elder,** Atmos Energy Corp.
**S. A. Frehse,** Consultant
**M. Kieba,** U.S. DOT — PHMSA
**E. K. Newton,** Southern California Gas Co.
**F. R. Volgstadt,** Volgstadt and Associates, Inc.
**D. Chairez,** *Contributing Member,* Consultant

## B31.8 SUBGROUP ON EDITORIAL REVIEW

**K. G. Leewis,** *Chair,* Leewis and Associates, Inc.
**K. B. Kaplan,** *Vice Chair,* Consultant
**R. W. Gailing,** Consultant
**D. W. Haim,** Consultant

## B31.8 SUBGROUP ON OFFSHORE PIPELINES

**K. B. Kaplan,** *Chair,* Consultant
**R. J. Appleby,** Consultant
**R. Dotson,** ADV Integrity, Inc.
**K. K. Emeaba,** GEIS Innovations
**M. W. Gragg,** ExxonMobil Production Co.

## B31.8 SUBGROUP ON OPERATION AND MAINTENANCE

**M. T. Reed,** *Chair,* Consultant
**R. W. Kivela,** *Secretary,* Consultant
**D. D. Anderson,** Consultant
**R. Dotson,** ADV Integrity, Inc.
**K. K. Emeaba,** GEIS Innovations
**B. Hanna,** DNV
**Y. Hubert,** Enbridge Pipeline, Inc.
**E. Kostelka,** Energy Transfer
**K. G. Leewis,** Leewis and Associates, Inc.
**C. Maier,** TC Energy
**D. K. Moore,** Trout Hydrodynamics, Inc.
**A. Post,** Consultant
**V. Romero,** Southern California Gas Co.
**D. Spillers,** U.S. DOT
**D. W. Spring,** The Equity Engineering Group
**B. Wolfe,** WSB
**D. W. Wright,** Wright Tech Services, LLC
**A. Bhatia,** *Contributing Member,* ROSEN Canada, Ltd.
**M. Boring,** *Contributing Member,* DNV
**C. A. Bullock,** *Contributing Member,* Integrity Solutions, Ltd.
**M. Hovis,** *Contributing Member,* Consultant
**M. Lamontagne,** *Contributing Member,* Lamontagne Pipeline Asset Corp.

## B31.8 GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS INDIA INTERNATIONAL WORKING GROUP

**J. Sivaraman,** *Chair,* Reliance Industries Limited
**R. Uprety,** *Vice Chair,* Oil Industry Safety Directorate
**S. Vyas,** *Secretary,* Reliance Industries, Ltd.
**P. K. Chauhan,** Pipeline Infrastructure, Ltd.
**J. George,** GSPL India Transco, Ltd. (GITL)
**A. Gurtu,** Reliance Gas Pipelines, Ltd.
**T. S. Kathayat,** Welspun Corp., Ltd.
**H. V. Khan,** VCS Quality Services Pvt., Ltd.
**R. Kishore,** Engineers India, Ltd.
**S. P. Mandal,** Certification Engineers International, Ltd.
**G. J. Murthy,** Mahanagar Gas, Ltd.
**B. B. Nallapaneni,** VCS Quality Services Pvt., Ltd.
**V. C. Patel,** Athena Powertech, LLP
**S. K. Paul,** Reliance Industries, Ltd.
**K. P. Radhakrishnan,** Gujarat State Petronet, Ltd.
**V. T. Randeria,** Gujarat Gas Co., Ltd.
**R. A. Selvan,** Gail India, Ltd.
**K. Singh,** KB Singh and Associates
**H. M. Solanki,** T. D. Williamson India Pvt., Ltd.
**R. Suresh,** Consultant
**M. Sharma,** *Contributing Member,* ASME India PVT., Ltd.

## B31.8 INTERNATIONAL REVIEW GROUP

**H. M. Al-Muslim,** *Chair,* Saudi Aramco
**A. Esmaeili,** APA Group
**Q. Feng,** PetroChina Pipeline Co.
**W. Feng,** PetroChina Pipeline Co.
**B. B. Nallapaneni,** VCS Quality Services Pvt., Ltd.
**W. Wu,** China Petroleum Pipeline Engineering Corp.
**Z. Yu,** China Petroleum Pipeline Engineering Corp.

## B31 FABRICATION AND EXAMINATION COMMITTEE

**R. D. Campbell,** *Chair,* Bechtel Energy, Inc.
**S. Findlan,** *Vice Chair,* Stone and Webster, Inc.
**U. D'Urso,** *Secretary,* The American Society of Mechanical Engineers
**B. Boseo,** Burns and McDonnell
**P. M. Davis,** Wood Group USA, Inc.
**M. DeLong,** IHI Energy Solutions, Inc.
**R. Duran,** Shell USA
**D. R. Frikken,** Becht Engineering Co., Inc.
**A. D. Nalbandian,** Thielsch Engineering, Inc.
**R. Reamey,** Turner Industries Group, LLC
**W. J. Sperko,** Sperko Engineering Services, Inc.
**J. Swezy, Jr.,** Bureau Veritas Inspection and Insurance
**P. Flenner,** *Contributing Member,* Flenner Engineering Services

## B31 MATERIALS TECHNICAL COMMITTEE

**P. Deubler,** *Chair,* Becht Engineering Co., Inc.
**C. Henley,** *Vice Chair,* Kiewit Engineering Group, Inc.
**C. Rodrigues,** *Secretary,* The American Society of Mechanical Engineers
**B. T. Bounds,** Bechtel Energy, Inc.
**W. P. Collins,** WPC Solutions, LLC
**C. H. Eskridge, Jr.,** Consultant
**A. Esmaili,** APA Group
**R. A. Grichuk,** S&B Engineers and Constructors, Ltd.
**J. Gundlach,** Michigan Seamless Tube and Pipe
**A. A. Hassan,** PGESCo
**L. Henderson, Jr.,** Kiewit Engineering Group, Inc.
**T. Hudson,** Black and Veatch
**G. A. Jolly,** Samshin, Ltd.
**C. J. Melo,** S&B Engineers and Constructors, Ltd.
**K. Pham,** Fluor
**D. W. Rahoi,** CCM 2000
**R. A. Schmidt,** Canadoil
**S. Tonkins,** BP Americas
**D. K. Verma,** Bechtel Energy, Inc.
**Z. Djilali,** *Contributing Member,* Sonatrach
**M. Nayyar,** *Contributing Member,* NICE

## B31 MECHANICAL DESIGN TECHNICAL COMMITTEE

**M. Engelkemier,** *Chair,* Cargill
**D. Arnett,** *Vice Chair,* ExxonMobil Research and Engineering
**R. Rahaman,** *Secretary,* The American Society of Mechanical Engineers
**G. A. Antaki,** Becht Engineering Co., Inc.
**R. Bethea,** HII — Newport News Shipbuilding
**D. J. Fetzner,** Consultant
**D. A. Fraser,** NASA Ames Research Center
**J. A. Graziano,** Consultant
**J. D. Hart,** SSD, Inc.
**R. W. Haupt,** Pressure Piping Engineering Associates, Inc.
**B. P. Holbrook,** Consultant
**R. A. Leishear,** Leishear Engineering, LLC
**G. D. Mayers,** Serco, Inc.
**T. Q. McCawley,** Consultant
**J. E. Meyer,** CDM Smith — Industrial Division
**P. Moore,** Burns and McDonnell
**A. Paulin,** Paulin Research Group
**M. J. Rosenfeld,** RSI Pipeline Solutions, LLC
**H. Kosasayama,** *Contributing Member,* JGC Corp.

# CORRESPONDENCE WITH THE B31 COMMITTEE

**General.** ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Code may interact with the Committee by requesting interpretations, proposing revisions or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B31 Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
http://go.asme.org/Inquiry

**Proposing Revisions.** Revisions are made periodically to the Code to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Code. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Code. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

**Proposing a Case.** Cases may be issued to provide alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Code and the paragraph, figure, or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Code to which the proposed Case applies.

**Interpretations.** Upon request, the B31 Standards Committee will render an interpretation of any requirement of the Code. Interpretations can only be rendered in response to a written request sent to the Secretary of the B31 Standards Committee.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at http://go.asme.org/InterpretationRequest. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of the B31 Standards Committee at the above address. The request for an interpretation should be clear and unambiguous. It is further recommended that the Inquirer submit his/her request in the following format:

| | |
|---|---|
| Subject: | Cite the applicable paragraph number(s) and the topic of the inquiry in one or two words. |
| Edition: | Cite the applicable edition of the Code for which the interpretation is being requested. |
| Question: | Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. Please provide a condensed and precise question, composed in such a way that a "yes" or "no" reply is acceptable. |
| Proposed Reply(ies): | Provide a proposed reply(ies) in the form of "Yes" or "No," with explanation as needed. If entering replies to more than one question, please number the questions and replies. |
| Background Information: | Provide the Committee with any background information that will assist the Committee in understanding the inquiry. The Inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information. |

Requests that are not in the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

Moreover, ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Standard requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the Inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

**Attending Committee Meetings.** The B31 Standards Committee regularly holds meetings and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the B31 Standards Committee.

# INTRODUCTION

**1 General.** The ASME Code for Pressure Piping consists of many individually published sections, each an American National Standard. Hereafter, in this Introduction and in the text of this Code Section, B31.8, when the word "Code" is used without specific identification, it means this Code Section.

The Code specifies engineering requirements deemed necessary for the safe design and construction of pressure piping. While safety is the primary consideration, this factor alone will not necessarily govern the final specifications of any piping installation or operation. The Code is not a design handbook. Many decisions that must be made to produce a sound piping installation and maintain system integrity during operation are not specified in detail within this Code. The Code does not serve as a substitute for sound engineering judgment by the operating company and designer.

To the greatest possible extent, Code requirements for design are stated in terms of basic design principles and formulas. These are supplemented as necessary with specific requirements to ensure uniform application of principles and to guide selection and application of piping elements. The Code prohibits designs and practices known to be unsafe and contains warnings where caution, but not prohibition, is warranted.

This Code Section includes

*(a)* references to acceptable material specifications and component standards, including dimensional and mechanical property requirements

*(b)* requirements for designing components and assemblies

*(c)* requirements and data for evaluating and limiting stresses, reactions, and movements associated with pressure, temperature changes, and other forces

*(d)* guidance and limitations on selecting and applying materials, components, and joining methods

*(e)* requirements for fabricating, assembling, and installing piping

*(f)* requirements for examining, inspecting, and testing piping

*(g)* procedures for operation and maintenance that are essential to public safety

*(h)* provisions for protecting pipelines from external and internal corrosion

It is intended that this edition of Code Section B31.8 not be retroactive. The latest edition issued at least 6 months before the original contract date for the first phase of activity covering a piping system or systems shall be the governing document, unless agreement is specifically made between contracting parties to use another edition, or unless the regulatory body having jurisdiction imposes the use of another edition or different requirements.

Either U.S. Customary (USC) units or International System (SI, also known as metric) units may be used with this edition. Local customary units may also be used to demonstrate compliance with this Code. One system of units should be used consistently for requirements applying to a specific installation. The equations in this Code may be used with any consistent system of units. It is the responsibility of the organization performing calculations to ensure that a consistent system of units is used.

Users of this Code are cautioned against making use of revisions without assurance that they are acceptable to any authorities of jurisdiction where the piping is to be installed.

The Code is under the direction of ASME Committee B31, Code for Pressure Piping, which is organized and operates under procedures of The American Society of Mechanical Engineers that have been accredited by the American National Standards Institute. The Committee is a continuing one and keeps all Code Sections current with new developments in materials, construction, and industrial practice.

When no Section of the ASME Code for Pressure Piping specifically covers a piping system, the user has discretion to select any Section determined to be generally applicable; however, it is cautioned that supplementary requirements to the Section chosen may be necessary to provide for a safe piping system for the intended application. Technical limitations of the various Sections, legal requirements, and possible applicability of other Codes or Standards are some of the factors to be considered by the user in determining the applicability of any Section of this Code.

**2 Appendices.** This Code contains two kinds of appendices: mandatory and nonmandatory. Mandatory appendices contain information the user needs to carry out a requirement or recommendation in the main text of the Code. Nonmandatory appendices, which are written in mandatory language, are offered for application at the user's discretion.

**3 Interpretations and Revisions.** The Committee has established an orderly procedure to consider requests for interpretation and revision of Code requirements. To receive consideration, inquiries must be in writing and must give full particulars. (See Correspondence With