ASME B31Q-2021

(Revision of ASME B31Q-2018)

Pipeline Personnel Qualification

ASME Code for Pressure Piping, B31

AN INTERNATIONAL PIPING CODE®

The American Society of Mechanical Engineers

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Two Park Avenue • New York, NY • 10016 USA

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The next edition of this Standard is scheduled for publication in 2023. This Standard will become effective 6 months after the Date of Issuance.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. 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

FOREWORD

This Standard provides general and specific requirements for the qualification of pipeline personnel. The implementation of this Standard is intended to minimize the impact on safety and integrity of the pipeline due to human error that may result from an individual's lack of knowledge, skills, or abilities during the performance of certain activities.

This Standard does not impose a requirement to perform specific tasks that affect the safety or integrity of the pipeline. It does, however, set the requirements for qualification of individuals in the event these types of tasks are performed.

This Standard establishes the requirements for identifying covered tasks that impact the safety or integrity of pipelines performed during operation, maintenance, or construction, properly qualifying individuals to perform these tasks, and for managing the qualifications of pipeline personnel. Design and engineering tasks are excluded because assurance of their quality is provided by the fact that appropriately educated or experienced individuals perform these tasks using guidelines and procedures for the conduct of their work. In addition, the quality of the work product is generally confirmed procedurally through review and ultimately by field inspection and testing of the design that are required by the applicable ASME Standard (B31.4 and B31.8 for hazardous liquid pipelines and gas transmission and distribution pipelines, respectively) and jurisdictional authority. Design and engineering tasks involving analysis and integration of data associated with integrity management are excluded from this Standard.

It is recognized that this Standard is being issued at a time when numerous entities have previously developed and implemented qualification programs. Therefore, as part of implementation of this Standard, the implementer should determine what changes to provisions of its existing program (e.g., span of covered, subsequent qualification intervals, and evaluation methods) are required to meet this Standard. An individual qualified to perform a covered task under the existing program could be considered to be qualified under the program described by this Standard. Individuals currently qualified under an existing program can maintain their qualifications by meeting the subsequent qualification requirements established in this Standard. A documented performance evaluation, if not previously performed for a task that requires performance evaluation for initial qualification under this Standard, should be performed either during the implementation period or at the time of subsequent qualification. The following is a summary of the revisions incorporated into previous editions and this edition of ASME B31Q:

(a) The 2010 edition of the Standard was a revision of the first edition, published in 2006, and included the following improvements:

(1) addition of four new tasks in the task list

(2) editorial refinements

(3) clarification on handling new technology, long-term degradation of physical abilities, qualification exemptions, and new construction

(b) The 2014 edition of the Standard enhanced the qualification standards to provide more in-depth evaluation criteria for 145 of the 165 tasks in the task list.

(c) The 2016 edition of the Standard included the following improvements:

(1) refinement of the task list, including

(-a) enhancement of the qualification standards to provide more in-depth evaluation criteria for the balance of the task list

(-b) addition of seven new tasks to the task list

(-c) removal of nine tasks specific to diving that were covered sufficiently by nondestructive testing (NDT), welding, and other land-based tasks

(-d) removal of one task that had been combined with a similar task

(2) addition of a Nonmandatory Appendix that provided guidance for implementing ASME B31Q and the nonmandatory task list

(3) editorial clarification and refinements, including

(-a) construction documentation clarified in the definition of documentation in the nonmandatory task list

(-b) redesignation of sections and appendices to follow ASME guidelines

(d) The 2018 edition of the Standard includes the following improvements:

(1) editorial clarification and refinements, including

(-a) consistency in language used for task titles and reference to other tasks

(-b) addition of a definition of interval to Nonmandatory Appendix A

(-c) update of language for a few requalification intervals to match current regulatory requirements

(-d) update of example Evaluation Criteria in Nonmandatory Appendix D to match the enhanced task standards

(2) refinement of the task list, including

(-a) addition of Task 1020, Perform Electrical Inspection of Pipe Coating (Holiday Detection or Jeeping)

(-b) removal of an unnecessary step in Task 0091, Troubleshoot Active Cathodic Protection System

(-c) clarification of the scope of tasks where portions of the work are covered by other tasks

(-d) clarification of what is covered by Task 0801, Perform Welding

(3) replacement of Nonmandatory Appendix B with a new table of tasks sorted by category and providing the latest version status of each task

(e) The 2021 edition of the Standard includes the following improvements:

(1) enhancement of para. 8.1, Evaluation Process, including

(-a) additional guidance in para. 8.1.2 regarding evaluation procedures

(-b) addition of para. 8.1.3, Evaluation Security

(2) revision of para. 9.3, Qualification Requirements for Emergency Response, including

(-a) addition of para. 9.3.1, Emergency Response Qualification

(-b) addition of para. 9.3.2, Mutual Aid

(3) editorial clarification and refinements, including

(-a) addition of para. 1.3, Units of Measure

(-b) refinements of various tasks in Nonmandatory Appendix A to address units of measur

(-c) update of language in para. 11.1, Program Effectiveness to include guidance regarding periodicity of OQ program effectiveness reviews

(-d) revision of title for Task 1511

(-e) addition of definitions for *mutual aid*, *emergency response provider*, and *first responder*

Following approval by the ASME B31 Standards Committee, ASME B31Q-202 approved by the American National Standards Institute (ANSI) on March 9, 2021.

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Standard for Pressure Piping

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General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard 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 Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. 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 Standard 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 Standard to which the proposed Case applies.

Interpretations. Upon request, the B31 Standards Committee will render an interpretation of any requirement of the Standard. 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 Standard 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.

ASME B31Q-2021
SUMMARY OF CHANGES

Following approval by the ASME B31 Committee and ASME, and after public review, ASME B31Q-2021 was approved by the American National Standards Institute on March 9, 2021.

ASME B31Q-2021 includes the following changes identified by a margin note, **(21)**.

Page	*Location*	*Change*
1	1.3	Added
1	2	(1) Definitions of *emergency response provider* and *first responder* added
		(2) Definition of *mutual aid* revised
9	8.1.2	Subparagraph (a) added, and subsequent subparagraphs redesignated
9	8.1.3	Added
13	9.3	Revised in its entirety
16	11.1	First paragraph revised
45	Task 0561	Metric value added to title
45	Task 0571	Metric value added to title
49	Task 0691	Subparagraph (a) revised
49	Task 0701	Subparagraph (a) revised
50	Task 0711	Subparagraph (a) revised
55	Task 0841	Subparagraph (a)(2)(-b) revised
63	Task 1081	Metric value added to title
64	Task 1091	Metric value added to title
74	Task 1351	Subparagraph (a) revised
79	Task 1501	Subparagraph (a)(6)(-c) revised
80	Task 1511	Title revised
81	Task 1541	Subparagraph (a)(3) revised
88	Nonmandatory Appendix B	Table B-1 updated

PIPELINE PERSONNEL QUALIFICATION

1 INTRODUCTION

1.1 Scope

This Standard establishes the requirements for developing and implementing an effective Pipeline Personnel Qualification Program (qualification program) utilizing a combination of technically based data, accepted industry practices, and consensus-based decisions. The Standard also offers guidance and examples of a variety of methods that may be used to meet selected requirements. The Standard specifies the requirements for identifying covered tasks that impact the safety or integrity of pipelines, for qualifying individuals to perform those tasks, and for managing the qualifications of pipeline personnel.

With the following exceptions, this Standard applies to tasks that impact the safety or integrity of pipelines:

(a) design or engineering tasks

(b) tasks that are primarily intended to ensure personnel safety

1.2 Purpose and Objectives

The purpose of this Standard is to establish requirements for the qualification and management of qualifications for pipeline personnel. The objective of this Standard is to minimize the impact on safety and integrity of the pipeline due to human error that may result from an individual's lack of knowledge, skills, or abilities during the performance of certain activities.

Individuals who perform covered tasks and those individuals responsible for ensuring a qualified workforce shall meet the applicable requirements of this Standard.

(21) ### 1.3 Units of Measure

This Standard states values in both U.S. Customary (USC) and International System (SI, also known as metric) units. Either set of units may be used. Local customary units may also be used to demonstrate compliance with this Standard. Within the text, the SI units are shown in parentheses or in separate tables. The values stated in each system are not exact equivalents; therefore, each system of units should be used independently of the other. It is the responsibility of the organization performing calculations to ensure that a consistent system of units is used.

When necessary to convert from one system of units to another, conversion should be made by rounding the values to the number of significant digits of implied precision in the starting value.

2 DEFINITIONS (21)

ability: the mental and physical capacity to perform a task.

abnormal operating condition (AOC): a condition that may indicate a malfunction of a component or deviation from normal operations that may

(a) indicate a condition exceeding design limits or

(b) result in a hazard(s) to persons, property, or the environment

affected individual: an individual who performs a covered task(s) or who has qualification program implementation responsibility.

covered task: a task that can affect the safety or integrity of the pipeline.

DI analysis: an analysis that explores the difficulty (D) and importance (I) of each task.

DIF analysis: an analysis that explores the difficulty (D), importance (I), and frequency of performance (F) of each task.

direct and observe: the process by which a qualified individual oversees the work activities of a nonqualified individual(s) and is able to take immediate corrective action when necessary.

distinctive physical ability: clearly defined perceptual or physical functioning required to perform a task (e.g., color vision, visual acuity, hearing, smell).

emergency response provider: governmental and nongovernmental emergency, public safety, fire, law enforcement, emergency response, emergency medical service providers and related authorities, agencies, agency volunteers, and personnel.

entity: any individual or organization utilizing any portion of this Standard to develop or implement a qualification program or portion thereof, including pipeline operators, contractors, subcontractors, service providers, etc.

evaluation: a process established to determine an individual's ability to perform a covered task. The term can be used to refer to the process, instrument(s), or both. The process may entail one or more evaluation methods or one or more distinct evaluation instruments.