

**ASME QAI-1-2018**  
(Revision of ASME QAI-1-2016)

# **Qualifications for Authorized Inspection**

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**The American Society of  
Mechanical Engineers**

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Two Park Avenue • New York, NY • 10016 USA

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# FOREWORD

The 2018 Edition of ASME QAI-1 incorporates the 2016 Edition of QAI-1 and revisions and additions approved by the QAI Standards Committee since the publication of the 2016 Edition.

This Standard is arranged into the Parts listed below.

- Part 1** Requirements for qualifications and duties of the Authorized Inspection Agency (AIA), its Authorized Nuclear Inspectors, and its Authorized Nuclear Inspector Supervisors, as used with the ASME Boiler and Pressure Vessel Code, Section III, Division 1, Rules for Construction of Nuclear Facility Components; Section III, Division 3, Containment Systems for Transportation and Storage of Spent Nuclear Fuel and High-Level Radioactive Material; and Section III, Division 5, High Temperature Reactors
- Part 2** Requirements for qualifications and duties of the AIA, its Authorized Nuclear Inservice Inspectors, and its Authorized Nuclear Inservice Inspector Supervisors, as used with the ASME Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components
- Part 3** Requirements for qualifications of the AIA, its Authorized Nuclear Inspectors (Concrete), and its Authorized Nuclear Inspector Supervisors (Concrete), as used with the ASME Boiler and Pressure Vessel Code, Section III, Division 2, Code for Concrete Containments (ACI 359)
- Part 4** Requirements for accreditation of AIAs
- Part 5** Requirements for qualifications and duties of the AIA and its Supervisors, and qualifications of Authorized Inspectors, as used with the ASME Boiler and Pressure Vessel Code, Section I; Section IV; Section VIII, Divisions 1, 2, and 3; Section X; and Section XII
- Part 6** Requirements for qualifications and duties for Qualified Inspection Organizations and qualifications for Inspectors and Supervisors as used with the ASME Boiler and Pressure Vessel Code, Section XII
- Part 7** Requirements for accreditation of Qualified Inspection Organizations (QIOs) performing inspections as required by the ASME Boiler and Pressure Vessel Code, Section XII
- Part 8** Requirements for qualification and duties of the Certified Individual performing inspections as used with the ASME Boiler and Pressure Vessel Code, Section I; Section IV; Section VIII, Divisions 1, 2, and 3; Section X; and Section XII when so referenced by the respective Code Sections

These requirements were developed and are maintained by the ASME Committee on Qualifications for Authorized Inspection, which was first formed on March 29, 1973, as a special committee under the Policy Board, Codes and Standards and that now reports to the ASME Board on Conformity Assessment. The Committee operates under procedures accredited by the American National Standards Institute.

The QAI-1 Standard has been developed with the following principles intended to apply to all jurisdictional authorities accredited as an AIA by ASME:

*(a) Reciprocity.* The enforcement authority (jurisdiction) agrees to accept the results of inspections required by the ASME Boiler and Pressure Vessel Code that have been performed by an accredited AIA.

*(b) Integrity.* The AIA maintains the commitment to the integrity of the inspection process and of the ASME Code Symbol Marks by fulfilling its obligations under the ASME Boiler and Pressure Vessel Code and by recognizing the role of the third party inspection system.

*(c) Openness.* The enforcement authority (jurisdiction) permits ASME Certificate Holders and Applicants for ASME Certificates of Authorization located within its jurisdiction to select other ASME accredited AIAs.

*(d) Participation in the Process.* The AIA agrees to participate in the development of the ASME Boiler and Pressure Vessel Code by becoming a member of either the Conference Committee or the International Interest Review Group (IIRG).

When required by context in this Standard, the singular shall be interpreted as the plural and vice versa, and the feminine, masculine, or neuter gender shall be treated as such other gender as appropriate.

# COMMITTEE ON QUALIFICATIONS FOR AUTHORIZED INSPECTION

(The following is the roster of the Committee as of December 2017.)

## STANDARDS COMMITTEE OFFICERS

**R. V. Wielgoszinski**, *Chair*  
**B. Hrubala**, *Vice Chair*  
**J. Pang**, *Secretary*

## STANDARDS COMMITTEE PERSONNEL

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<b>P. D. Edwards</b> , Stone & Webster, Inc.	<b>P. L. Sturgill</b> , Sturgill Welding & Code Consulting, LLC
<b>B. Hrubala</b> , TUV Rheinland Industrial Solutions, Inc.	<b>D. E. Tuttle</b> , Anderson Greenwood Crosby
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<b>K. A. Kavanagh</b> , U.S. Nuclear Regulatory Commission	<b>R. V. Wielgoszinski</b> , Hartford Steam Boiler of Connecticut
<b>B. L. Krasniun</b> , ASFALEIA Inspection & Management Services Ltd.	<b>P. Williams</b> , QRCS, Ltd.
<b>K. T. Lau</b> , Alberta Boilers Safety Association	<b>Y. Kim</b> , <i>Alternate</i> , Korea Authorized Inspection & Research Institute Co., Ltd.
<b>J. M. Lyons</b> , American Power Consultants, Inc.	<b>M. Poehlmann</b> , <i>Alternate</i> , Alberta Boilers Safety Association
<b>J. Pang</b> , The American Society of Mechanical Engineers	<b>R. Rockwood</b> , <i>Alternate</i> , The Hartford Steam Boiler Inspection & Insurance Co.
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<b>M. Pischke</b> , GE Power	
<b>T. E. Quaka</b> , Consultant	

## CORRESPONDENCE WITH THE QAI COMMITTEE

**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, QAI 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 QAI 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 QAI 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 QAI 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 QAI 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 QAI Standards Committee.

# ASME QAI-1-2018 SUMMARY OF CHANGES

ASME QAI-1-2018, which was approved by ASME on July 10, 2018, replaces previously issued ASME QAI-1-2016.

In ASME QAI-1-2018, “ASME BPV Code” has been editorially revised to “ASME Code” and footnotes are treated as endnotes. The endnotes are referenced in numeric order and appear at the end of this Standard. Also, the edition includes changes and corrections as well as the following changes identified by a margin note, **(18)**.

<i>Page</i>	<i>Location</i>	<i>Change</i>
1	1-1.1.1	(1) Subparagraph (c) revised (2) Endnotes 4, 5, and 6 added
2	1-1.2	Revised
2	1-1.2.1	Revised
2	1-1.2.2	Endnote 8 revised
2	1-1.2.5	Subparagraph (a) editorially revised
3	1-1.2.10	Revised
3	1-1.2.12	Added
3	1-1.2.13	(1) Added (2) Endnote 9 added
6	1-3.2.2	Endnote 11 added
6	1-3.2.18	Revised
6	1-3.2.18.1	Subparagraph (b) editorially revised
8	2-1.1.1	(1) Subparagraph (c) revised (2) Endnotes 4, 5, 6, and 12 added
9	2-1.2.6	Revised
9	2-1.2.10	Revised
10	2-2.1.1	Revised
11	2-3.1	Revised
11	2-3.1.5	Endnote 11 added
12	2-3.2.10	Revised
12	2-3.2.10.1	Subparagraph (b) revised
13	3-1.1.1	(1) Subparagraph (c) revised (2) Endnotes 4, 6, and 14 added
14	3-1.2	Revised
14	3-1.2.1	Revised
15	3-1.2.8	Revised
15	3-1.2.12	Added
16	3-2.1.1	Revised
17	3-3.2.2	Endnote 11 added
18	3-3.2.19	Revised
18	3-3.2.19.1	Subparagraph (b) editorially revised

21	5-1.1.1	(1) Subparagraph (c) revised (2) In subparagraph (c)(1), endnote 21 added
22	5-1.1.5	Revised
22	5-1.1.10	Added
22	5-1.2	Revised
22	5-1.2.1	Revised
22	5-1.2.2	Endnote 11 added
23	5-1.2.7	Revised
23	5-1.2.13	Added
25	5-3.1.1	Revised
25	5-3.1.2	Endnote 25 added
25	5-3.3	Revised
25	5-3.3.1	Subparagraph (b) editorially revised
26	6-1.2	Revised
26	6-1.2.1	Endnote 11 added
26	6-1.2.5	Editorially revised
27	6-1.2.11	Revised
27	6-1.2.12	Added

# Part 1

## Qualifications and Duties for Authorized Inspection Agencies, Nuclear Inspectors, and Nuclear Inspector Supervisors (Applicable to ASME Boiler and Pressure Vessel Code, Section III, Divisions 1, 3, and 5)

### 1-0 SCOPE

**Part 1** is for use with the ASME Code,<sup>1</sup> Section III, Divisions 1, 3, and 5, including applicable Addenda and Code Cases.

### 1-1 THE AUTHORIZED INSPECTION AGENCY

#### 1-1.1 Qualifications

An Authorized Inspection Agency (AIA) is an organization meeting the criteria of this Standard that is accredited by the Society pursuant to the provisions set forth in **Part 4** to provide AIA services within a jurisdiction.<sup>2</sup> Such agencies employ Authorized Inspectors and Inspector Supervisors that meet the criteria of the ASME Code Section III, Division 1, 3, or 5 and of the National Board Rules for Commissioned Inspectors.<sup>3</sup>

(18) **1-1.1.1** An AIA shall be one of the following:

(a) a jurisdiction<sup>2</sup> that has adopted and does administer the ASME Code Section III, Division 1, 3, or 5 as a legal requirement and is qualified to be represented on the ASME Code Conference Committee.

(b) an insurance company that has been licensed or registered by the appropriate authority of a state of the United States of America, or of a province of Canada, to write boiler and pressure vessel insurance in such state or province. The insurance company shall show its capability to provide boiler and pressure vessel insurance coverage by being actively engaged in writing such insurance in one or more of the states or provinces where so licensed or registered.

(c) a company in the business of providing “third party” inspection services. The company shall have

(1) recognition from a government entity<sup>4</sup> to perform inspection and design examinations for pressure-retaining and pressure-relieving items<sup>5</sup> performing a safety function<sup>6</sup> and for installation at an operating nuclear facility within its jurisdictional boundaries

(-a) The company shall be a registered entity within the same city, state, province, or country as the government entity that is providing the recognition.

(-b) The government entity may elect to designate another organization to authorize the performance of inspections and design examinations.

(2) accreditation or certification under a recognized accreditation or certification scheme that is found acceptable by ASME

(-a) The scope of activity on the certificate shall identify the performance of inspections and design examinations for pressure vessels and/or boilers.

(-b) The certificate shall be valid and in good standing.

(-c) The company shall have undergone at least one accreditation or certification renewal cycle.

(3) appropriate levels of financial support or liability insurance

**1-1.1.2** The jurisdiction described in **1-1.1.1(a)** may designate one or more organizations to act on its behalf to enforce its regulations. The organization shall

(a) provide evidence establishing that such delegation of authority is duly authorized by the laws of the jurisdiction

(b) describe how the ASME Code is accepted by the jurisdiction

(c) describe how the ASME Code is enforced by the organization

**1-1.1.3** An AIA shall be accredited by the Society pursuant to the provisions set forth in **Part 4**. The AIA services provided by their Inspectors and Inspector Supervisors shall also be subject to audit by ASME for compliance with this Standard during shop or site reviews of organizations for which they provide Authorized Nuclear Inspection.

**1-1.1.4** The AIA shall provide authorized inspection services within such states or provinces by Inspectors and Inspector Supervisors who meet the qualifications of the Authorized Nuclear Inspector and of the