Committee Handbook

A Guide to **Effective** Committee **Participation** and Development of **Documents**

> HYDRAULIC INSTITUTE



Committee Handbook

A Guide to Effective Committee Participation and Development of Documents

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Table of Contents

- 1. Welcome to the HI Committee Handbook
- 2. Types of Hydraulic Institute Members and Partners
- 3. Overview of Hydraulic Institute Technical Affairs Department and Committee
 - 3.1 Role of Technical Affairs Steering Committee (TASC)
 - 3.2 Overview of the Standards Committee and Group Leads
 - 3.2.1 Role of the Standards Committee
 - 3.2.2 Role of Group and Section Leads
 - 3.2.3 New Work Item Proposal (NWIP)
 - 3.3 Technical Affairs Organizational Chart
- 4. General Information of the Publications of the Hydraulic Institute
 - 4.1 Types of Publications of the Hydraulic Institute
 - 4.2 Lifecycle and Production Timelines of ANSI/HI and HI Publications
 - 4.2.1 Production Timelines
 - 4.2.1.1 Actions within Production Timelines
 - 4.2.1.2 The 12 Month Production Timeline
 - 4.2.1.3 The 24 Month Production Timeline
 - 4.2.1.4 The 36 Month Production Timeline
 - 4.2.1.5 The 48 Month Production Timeline
 - 4.2.2 Addenda and Errata for Publications
 - 4.2.3 Requests for Interpretation
 - 4.3 Table on Publication Types and Publication Life Cycles
- 5. Hydraulic Institute Committees: Structure and Participation
 - **5.1 Required Practices**
 - 5.1.1 Antitrust Policy, Patent Policy and Export Control and Sanction Laws
 - 5.1.2 Lack of Dominance
 - 5.1.3 Due Process and Balance Requirement (ANSI Canvass)
 - 5.2 Committee Roles, Responsibilities, and Expectations
 - 5.2.1 Quorum

HYDRAULIC INSTITUTE

- 5.3 Committee Leadership
 - 5.3.1 Selecting Leadership
 - 5.3.2 Unexpected Changes in Leadership
- 5.4 Reviewing Committee Roster from HI Staff
- 5.5 Resolving Conflict Roberts Rules of Order
- 6. Committee Meetings: What to Expect and Best Practices
 - 6.1 Meeting Frequency
 - 6.2 Committee Launch Following Standards Committee Approval
 - 6.3 Meeting Agendas
 - 6.4 What to Expect at an In-Person Committee Meeting
 - 6.5 What to Expect from a Virtual Committee Meetings
 - 6.6 Best Practices for Running Committee and Workgroup Meetings
 - 6.6.1 Best Practices for Running an In-Person or Virtual Meeting
 - 6.6.2 Best Practices for Running a Working Group Virtual Meeting
 - 6.7 Committee Meeting Minutes
 - 6.8 Committee Action Items
- 7. Document Development and Balloting Practices
 - 7.1 Collaborating on Microsoft Teams
 - 7.1.1 Best Practices for Teams at HI
 - 7.2 Overview of Balloting
 - 7.2.1 Rounds of Balloting that Occur
 - 7.2.2 Types of Ballots that can be Cast
 - 7.2.3 What to Expect from a Committee Ballot
 - 7.2.3.1 A Note on Commenting
 - 7.2.3.2 A Note on Colleague Support for Committee Ballot
 - 7.2.3.3 A Note on Negative Ballots
 - 7.2.4 What to Expect from a SVR Ballot
 - 7.2.5 What to Expect from a Consensus Committee (ANSI Canvass) Ballot
 - 7.2.6 What to Expect from a Peer Review
 - 7.3 Hydraulic Institute Publication Style Guide
 - 7.3.1 Language Practices
 - 7.3.1.1 Plagiarism

HYDRAULIC INSTITUTE

- 7.3.1.2 Guidance on Special Word Usage
- 7.3.2 Numbering of HI Publications
 - 7.3.2.1 Overview of HI Numbering Logic
 - 7.3.2.2 Numbering Sequence for a Single Standard
 - 7.3.2.3 Numbering Sequence for a Multiple Standard
 - 7.3.2.4 Numbering Sequence for a Guidebook
- 7.3.3 Equation Format
- 7.3.4 Units of Measurement
- 7.3.5 Images
 - 7.3.5.1 File type/sizing
 - 7.3.5.2 Copyright Images and Permission Form
- 7.3.6 Foreword Boiler Plates
- 7.3.7 Publication Data Pages
- 7.3.8 Formatting Appendices
- 7.3.9 Formatting Tables and Figures
- 7.3.10 Formatting Bullet Points
- 7.3.11 HI Branded Colors and Fonts
- 7.3.12 Formatting Footnotes
- 7.3.13 Check Lists for Interior Pages of Publication
 - For ANSI/HI Standards
 - For HI Guidebooks
 - For HI Standards/ Program Guidelines/ Specifications
 - For HI White Papers
- 8. FAQ about HI Committees
 - 8.1 What happens when a chair leaves?
 - 8.2 What happens when an active participant leaves HI membership?
 - 8.3 How do I access forms? (NWIP/ Permission for Image/ etc.)
 - 8.4 How do I access Teams?
 - 8.5 I am new to HI, how do I get involved?

8.6 I can no longer support HI committee work because of my work schedule but want to remain informed. What do I do?



- 9. Exhibits
 - Exhibit 1: New Work Item Proposal
 - Exhibit 2: Organizational Chart of Technical Affairs
 - Exhibit 3: Hydraulic Institute Antitrust Policy
 - Exhibit 4: Hydraulic Institute Export Control and Sanction Laws
 - Exhibit 5: Example of a Committee Meeting Agenda
 - Exhibit 6: Hydraulic Institute Minutes and Action Items Policy
 - Exhibit 7: Example Language for Committee Ballot Email
 - Exhibit 8: Hydraulic Institute Policy on Plagiarism
 - Exhibit 9: Tables 14.2.a Principal symbols and 14.2.b Subscripts from 2019 Publication
 - Exhibit 10: Foreword Boilerplate Example HI Publications Only
 - Exhibit 11: Publication Data Pages
 - Boilerplate For ANSI/HI Standard
 - Boilerplate For HI Standard
 - Boilerplate For HI Program Guideline
 - Boilerplate For HI White Paper
 - **Boilerplate For HI Specification**
 - Boilerplate For HI Body of Knowledge
 - Exhibit 12: Guiding Principles Selection of Committee Leadership
 - Selection of Committee Chair
 - Selection of Committee Vice-Chair
 - Exhibit 13: Policy for Remote Participation at an HI Meeting



1. Welcome to the HI Committee Handbook

Hello and welcome to Hydraulic Institute! We are excited to have you join our roster of technical experts who volunteer their time and knowledge to the work we do.

The Hydraulic Institute (HI/ the Institute) centers the pump industry around excellence and efficiency to power everyday life. HI's mission is to advance the pump manufacturing industry by becoming the world's resource for pumping solutions and advancements in the industry. We achieve this by: addressing pump systems, developing standards, expanding knowledge and resources, educating the marketplace, and advocating for the industry. One of the ways we realize this mission is through our publications.

The Committee Handbook (Handbook) was written to provide guidance to anyone involved in the development of an HI publication. Prepared by HI staff, the Handbook was reviewed and approved by the sitting Vice-President of Technical Affairs, the Chair of the Standards Committee, and a workgroup of tenured volunteers to ensure quality and efficacy. This document is available online to ensure expectations are communicated and consistent between committees.

The Handbook is intended for committee leadership and HI Staff to use as a reference as needed throughout the development process. To that end, the Handbook provides an overview of HI structure followed by pertinent topics that frequently come up in committee discussions. Each section is numbered for ease of reference on a future date but please note that exhibits are located at the end of the document. Please see the table of contents for a detailed list of topics covered in the Handbook.

While HI Staff will periodically offer training on these processes, questions can be addressed immediately by emailing <u>HITechnical@pumps.org</u>.

We hope that this document aids in orientation and navigation of HI committees and look forward to collaborating with you to better the pumping industry.

Warm regards,

Hydraulic Institute Technical Affairs Staff

NOTE: The controlling document for creation of ANSI/HI Standards is written, periodically updated, and approved as required by the American National Standards Institute (ANSI) to meet the ANSI Essential Requirements. Public documentation of those requirements is available on www.ansi.org. The applicable Hydraulic Institute Policy & Procedure document titled Hydraulic Institute Policies and Procedures: Standards Development Operating Procedures (HI Policy), 2019 Revision is available to all members. There is intended to be no conflict between the Handbook and the HI Policy. If any conflict is found, its existence shall be brought to the attention of the VP Technical Affairs and the HI Technical Director for resolution. The HI Policy document shall take precedence.



2. Types of Hydraulic Institute Members and Partners

Participation within HI is contingent on membership or partnership with the Institute. While most companies or end-users qualify for participation within the Institute, all applicants are privy to HI Board review and approval. Please note that membership or partnership is an annual fee and is **not managed** by the Technical Affairs team. Questions about membership dues and benefits can be sent to <u>HITechnical@pumps.org</u> and will be directed to the Manager of Membership.

Below is a list of Membership and Partnership types followed by a brief description.

- Member: Pump manufacturers that sell pumps into the North America market
- Associate Member: Pump system integration technology developers and/or manufacturers of pump system components which sell into the North America market
- Standards Partner: Engineering and consulting firms, municipalities, and end-users based in North America
- Industry Partner: An end-user of pumps and/or retiree
- Academic Partner: Any individual who is employed by or attends a college or university and who wishes to contribute
- **Media Partner:** Media partners typically collaborate with HI during conferences. They are not allowed to participate nor attend technical committee meetings.

When participating on HI committees you will see representatives from many membership/partnership types. Having this variety of expertise contributing to a document's development and review ensures that the publication is well-rounded.

3. Overview of Hydraulic Institute Technical Affairs Department and Committee

The Technical Affairs (TA) Department at HI oversees the publications (both new and existing) of the Institute in addition to any educational content that is being developed by HI's educational subsidiary, Pump Systems Matter (PSM). HI staff within the TA Department includes the Technical Director and their team that work as project managers on specific publications. This section of the Handbook will not focus on the structure of HI's internal TA department but cover the governance structure of Technical Affairs Steering Committee.

3.1 Role of Technical Affairs Steering Committee (TASC)

The Vice-President of the Technical Affairs (VPTA) chairs the Technical Affairs Steering Committee (TASC) and is member of the HI Board of Directors (BOD). In this capacity, The VPTA receives direction for the BOD and is able report to the BOD the needs of Technical Affairs and the progress within Technical Affairs.



The TASC supports the VPTA at the highest level so that the technical leader of HI can provide input and receive direction. Consequently, participation is by invitation of the VPTA, generally includes Chairs of the Standards Committee, Section Chairs, and Industry Representatives. The TASC meets three times a year just prior to the beginning of an HI conference.

3.2 Overview of the Standards Committee and Group Leads

3.2.1 Role of the Standards Committee

The Standards Committee is responsible for governance of committees within Technical Affairs, which produce the vast majority of publications within the Institute. The Standards Committee has the responsibility to prioritize technical work of the Institute to manage compliance with ANSI renewal requirements and consistency with HI Strategic Plan Goals. See Table 5.2.1 Committee Roles and Responsibilities for more information. This includes but is not limited to considering new work item proposals, approving the formation of committees, and approving the chairs of technical committees or sections. The Standards Committee can provide guidance to technical committees and provides global policies as to how to handle items that apply to multiple committees and publications.

The Standards Committee has a chair and vice-chair and conducts itself in a manner consistent with the By-Laws of the Hydraulic Institute. Membership is open to Chairs and Vice-Chairs from all Sections and Technical Committees, but attendance and participation in Standards Committee meetings is open to all HI members and partners.

Although the Standards Committee has oversight responsibilities of HI publications it is important to note that it does not author standards or technical documents.

This committee meets at the conclusion of every HI conference. During this meeting, group and section leads report on progress and timeline for publication, address questions from committees, announce leadership changes in committees as needed, and propose new topics for consideration and a vote. HI staff will report on the progress of committees/section is the appropriate group/section/committee leadership is not present. This meeting is open for all to attend.

3.2.2 Role of Group and Section Leads

There are five groups within the Standards Committee. Some groups are broken down into sections due to the quantity of publications of that specific type/topic.

- Associate Member Council Group
 - Couplings
 - Drivers & Controls
 - Housing & Seals
- General Standards Section
- Positive Displacement Group
 - Air-Operated



- Controlled Volume Metering Section
- Reciprocating Section
- o Rotary Section
- Rotodynamic Group
 - o Application Specific Section
 - Design & Operation Section
 - Performance Section
 - Testing Section
- Systems Section

Each of the sections have a Chair and Vice-Chair whose primary responsibility is to monitor the progress of committees that fall within the section, organize the activities of the section and provide leadership and assistance to the committee chairs to establish and meet targets within the required timeframe. The Sections Chairs (with the aid of TA Staff or membership attendees) report committee progress to the Standards Committee and review new work item proposals that fall within their section prior to presentation to the Standards Committee.

3.2.3 New Work Item Proposal (NWIP)

A new standard, guideline, white paper, or other publications can be requested by any HI Section, Committee, Approved Standards Committee working group/task force or General HI member. The NWIP form will need to be filled out as complete as possible and send to <u>HITechnical@pumps.org</u> for the Director of Technical Affairs (HI Staff) and Section Chair for review. The Section Chair and DTA will review NWIP form for completeness and agree the request is valid. If the NWIP request is valid, it will then be reviewed by the Standards Committee at the upcoming HI Conference.

Please see Exhibit 1 for an example of a New Work Item Proposal Form.

3.3 Technical Affairs Organizational Chart

The Technical Affairs Organizational Chart in **Exhibit 2** is updated prior to each HI Conference. The chart legend highlights the steering committees, active and inactive committees, the committees that are seeking members, and committees that are currently working on educational development.

4. General Information of the Publications of the Hydraulic Institute

4.1 Types of Publications of the Hydraulic Institute

Most of HI's publications are approved by the American National Standards Institute (ANSI) while some are approved by HI alone but follow very similar processes. The approval type (ANSI/HI or HI) of a publication will determine the language used, ballots conducted, and timeline for review of a document.

Please see the table in section 4.3 for specifics on each publication type.



4.2 Lifecycle and Production Timelines of ANSI/HI and HI Publications

After a document has been published, the committee becomes inactive, and the document enters a monitoring timeline. The monitoring timeline is determined by the approval type of a publication. ANSI/HI Standards must meet a five-year revision or reaffirmation schedule whereas HI publications meet a ten-year revision or reaffirmation schedule.

To determine what path to take (e.g. revision or reaffirmation) it is best practice for the current section chair and recent committee chair, if available, to review the document and make a recommended action to the standards committee. For a ten-year review, a committee will be formed (ideally with past members from the most recent publication) to review the document and provide a recommended path forward to the Standards Committee.

A New Work Item Proposal (NWIP) to the Standards committee can be submitted during an in-person conference outside if more frequent review is required.

Please see Table 4.2.1 below for more information on lifecycle actions and section 4.3 for specifics on each publication type.

Action	Description	Type of Work
New Publication (Exhibit 1)	Creation of outline and document writing per the approved purpose and scope.	Balloting process and disposition of comments.
Addenda or Errata	See section 4.2.1	Minor edits made within the 5 or 10 year cycle timeline before a formal review has been launched by the Standards committee.
Revision of Existing Publication	Any substantive change made to the document	Additions, deletions, updated references, or updated tables per HI formatting guidelines and Nomenclature standards
Reaffirmation of Publication	Does not require any major changes.	Reaffirmed and published with the non-substantive changes. Review standard outline numbering, equation formatting, graphics and terminology per appropriate nomenclature standard. Encompasses minor corrections and editorial updates. Updated cover and foreword to indicate reaffirmed year and committee. Reaffirmation may occur a maximum of two consecutive times.

Table 4.2.1: Publication Lifecycle Actions



Withdrawal of	The publication is not relevant or	For ANSI approved documents, HI Staff works ANSI to
Publication	requires substantive updates, but	withdraw the document from register. For HI approved
	the Standards Committee	documents, HI Staff removes from circulation.
	determines they cannot be	
	supported by membership in a	
	timely manner.	



4.2.1 Production Timelines

The production timelines differ from monitoring timelines. Whereas monitoring timelines manage a document *after* publication and help determine the appropriate Publication Lifecycle Action (as seen in Table 4.2.1), the production timeline is a project management tool when a publication needs to be worked on by a committee.

The production timelines detailed below were designed to guide a committee's work by outlining the duration of tasks in months and listing milestones to be completed. The focus is on the time the committee is collaborating on a publication and does not include pre-committee or final publication work (see **NOTEs** below). The selection of a production timeline will depend on the type of action for a publication. Typical production timelines are listed beneath each publication life cycle action type.

To assist with the Project Management of a committee, Ghantt charts have been created to complement the production timelines. Committee leadership should request the appropriate Ghent chart from their HI representative.

NOTE ON RECIRCULATION BALLOTS: The production timelines below do not include any recirculation ballots that may be required during the production process. Should a recirculation ballot need to be launched, HI staff will inform committee leadership on the impact that ballot will have on the deliverable.



NOTE ON PRE-COMMITTEE WORK: Following the Standards committee approval, the committee chair and HI staff may elect to do some preliminary work prior to the start of a production timeline. HI staff and committee chair will either 1) review existing publication for edits or 2) begin drafting an outline for review. This process typically takes 3 months (or the time between in-person conferences) and is not included within the production timelines listed below.

NOTE ON FINAL PUBLICATION WORK: Following the completion of comment disposition of the last round of balloting (either ANSI Canvass or Peer Review depending on the document type), the final publication process begins. During this time, the committee leadership is often asked to review the committee roster for award recipients, draft language for the foreword (guidebooks only), and fill out marketing material that addresses changes/highlights of the publication. HI staff is responsible for copy editing, desktop publishing, cover art creation, and website product set up. This process typically ranges from 1.5 months (white papers/reaffirmations) to 4 months (major revision or new publications) and is not included within the production timelines listed below.

Action	Description of Task	Detailed Description Found:
Outline	Drafting/reviewing outline of content with committee. Existing standards will need to be reviewed to align with boilerplate numbering/formatting/ templates as needed.	Section 7.3.2 (Standard HI Numbering)
Draft Development	DraftThe time when content of a publication is being edited/Developmentwritten/ revised as needed.	
Committee Ballot Committee Ballot Comment Disposition	Typical duration for ballot of 30 days. <i>Does not include</i> re-circulation ballots for negative ballot comment resolution and/or major revision from a comment.	Section 7.2.3 (Committee Ballot)
SVR/ANSI Ballot SVR/ANSI Ballot Comment Disposition	Typical duration for ballot of 45 days. <i>Does not include</i> re-circulation ballots for negative ballot comment resolution and/or major revision from a comment.	Section 7.2.4 (SVR Ballot), 7.2.5 (ANSI Canvass Ballot)
Peer Review	For Guidebooks Only. Typically conducted by those outside of the Institute's membership body.	Section 7.2.6 Peer Review

4.2.1.1 Actions within Production Timelines



4.2.1.2 The 12 Month Production Timeline



Typical Publication Action: Reaffirmation

Reaffirmations do not have all possible steps within the production timeline because the ANSI requirements for this action are minimal. As a result, this process is typically a quick turnaround from Standards Committee approval to final publication. Steps included in this publication process are:

- Draft Development 8 Months: Committee reviews the proposed editorial changes (graphics, tables, formatting) from the chair and will add as needed. If the committee decides to adjust the production timeline from reaffirmation to revision, HI Staff will need to submit a revised PINs to ANSI and a new production timeline will need to be adopted for project management.
- **ANSI Ballot 1.5 Months:** Both ballots will need to be conducted simultaneously to abide by the 12-month timeframe.
- ANSI Comment Disposition 2.5 Months

NOTE: For Reaffirmations, only ANSI ballot is required



4.2.1.3 The 24 Month Production Timeline

Typical Publication Action: White Paper or Minor Revision

The 24 Month Production Timeline is best suited for smaller new publications (White Paper) and for those publications that will have a minor revision (example: aligning definitions and equations within a



testing standard to the corresponding pump nomenclature standard). Steps included in this publication process are:

- **Outline 2.5 Months:** Taking Chair's review and HI formatting into consideration, committee works to revise (or create in the case of a White Paper), an outline. Sub-sections can be created by individuals for review at committee meetings.
- **Draft Development 12 Months**: Assign sections of outline as needed for content revision/creation. Use workgroups if needed.
- Committee Ballot 1 Month
- Committee Ballot Comment Disposition 4 Months
- SVR/ANSI Ballots 1.5 Months: Both ballots will need to be conducted simultaneously to hasten review. As the duration of these ballots differ (SVR is 30 days and ANSI 45), HI Staff will compile results as they arrive and conduct additional outreach for balance responses as needed.
- SVR/ANSI Comment Disposition 3 Months



4.2.1.4 The 36 Month Production Timeline

Typical Publication Action: Major Revision

The 36 Month Production Timeline is best suited for existing publications that require a major revision (e.g., new graphics, entirely new sections, expanded appendices content, topics of new technology, etc.). Steps included in this publication process are:

- Outline 6 Months: Taking Chair's review into consideration, committee works to create an
 outline. Sub-sections can be created by individuals and/or workgroups for review at committee
 meetings.
- **Draft Development 18 Months:** Assign sections of outline as needed for content revision/creation. Use workgroups if needed.
- Committee Ballot 1 Month
- Committee Ballot Comment Disposition 6 Months
- SVR/ANSI Ballots 1.5 Months: Both ballots will need to be conducted simultaneously. As the duration of these ballots differ (SVR is 30 days and ANSI 45), HI Staff will compile results as they arrive and conduct additional outreach for balance responses as needed.



• SVR/ANSI Comment Disposition – 3 Months



4.2.1.5 The 48 Month Production Timeline

Typical Publication Action: New Publication

It can be especially difficult for New Publications to project a completion date. This Production Timeline aims to blend aspirational milestones with adequate time allotment for writing and revision. The 48 Month Production Timeline allots 9 months for outline drafting and nearly two years for content completion.

- Outline 9 Months: Taking Chair's review into consideration, committee works to create an
 outline. Sub-sections can be created by individuals and/or workgroups for review at committee
 meetings.
- **Draft Development 22 Months:** Assign sections of outline as needed for content revision/creation. Use workgroups if needed.
- Committee Ballot 1 Month
- Committee Ballot Comment Disposition 10 Months
- SVR/ANSI Ballots 1.5 Months: Both ballots will need to be conducted simultaneously. As the duration of these ballots differ (SVR is 30 days and ANSI 45), HI Staff will compile results as they arrive and conduct additional outreach for balance responses as needed.
- SVR/ANSI Comment Disposition 8 Months

4.2.2 Addenda and Errata for Publications

Occasionally, errors within a publication (whether grammatical or technical in nature) are brought to the attention of the Technical Affairs department. If the Technical Director determines the proposed edit (typically submitted via HI's website) is substantial enough, the Technical Director can send to the section chair and previous committee leadership for review. An errata or addenda may be issued and posted on the document's purchase page.

<u>Addenda</u> – Corrections that are made to documents that have been published/printed by the Hydraulic Institute. These corrections are ones that require reaching out to the original consensus body and public review participants, if any, via electronic balloting. HI staff will implement via the HI Addenda policy.



<u>Errata</u>: Modifications that are made to documents that have been published/printed by the Hydraulic Institute. These modifications are only to correct typographical or editorial issues. Errata do not need to go through the balloting process; however, they have been reviewed by the Section Chair and past committee Chair, if active. If the Section Chair's discretion other members can be solicited for review. Modifications will be sent to the desktop publisher to produce an updated document.

HI Staff supports the publication of errata or addenda, posting to the publication webpage and provides notifications, when possible, to past purchasers and/or subscribers of the specific document.

4.2.3 Requests for Interpretation

According to **HI Consensus Body Policy and Procedures, Section 8, 2019 Revision**: "An interpretation is an explanation that addresses a question regarding the meaning or intent of a specific statement or requirement in a standards document. Due to the risk to the Hydraulic Institute when the committee chair, Technical Director, or any other individual prepares a written interpretation, which may alter the context or the content of the standards, HI shall not issue interpretations.

Publication Type	Accreditation	Description	Language	Ballots	Lifecycle
Standard	HI or ANSI/HI	Quoting from Article XV, Standards, of the By-Laws of the Institute, Section B: "An Institute Standard defines the product, material, process or procedure with reference to one or more of the following: nomenclature, composition, construction, dimensions, tolerances, safety, operating characteristics, performance, quality, rating, testing and service for which designed."	Normative	Committee/ Standards Voting Representative (SVR) /ANSI Canvass	10 Years (HI) or 5 Years (ANSI)
Guideline	HI or ANSI/HI	A Hydraulic Institute Guideline is not normative. The guideline is tutorial in nature, to help the reader better understand the subject matter.	Informative	Committee/ Standards Voting Representative (SVR) / Peer Review	10 Years (HI) or 5 Years (ANSI)
Program Guideline	HI	A Hydraulic Institute Program Guideline outlines a normative process that must be followed to participate in the Program.	Normative	Committee/ Standards Voting Representative (SVR) /Peer Review	5 Years
Specification	HI	A Hydraulic Institute Specification precisely and clearly states requirements that are suitable for incorporating into contract terms. In addition to the stated requirements, it may state options, and provide external references, notes to the specifier, datasheets, or other useful content. All content that is optional or is not a stated requirement shall not conflict with the stated requirements.	Informative	Committee/ Standards Voting Representative (SVR) /Peer Review	10 Years

4.3 Table on Publication Types and Publication Life Cycles



Guidebook	HI	A Hydraulic Institute guidebook addresses a system	Informative	Committee/	10 Years
		component that is non-pump (examples: mechanical seal,		Standards Voting	
		variable frequency drive, or IoT system) or addresses a		Representative (SVR)	
		specific system (examples: water/wastewater, life cycle		/Peer Review	
		costs, or commercial building services) which are typically			
		covered in Pump Application Guidelines.			
White Paper	HI	A Hydraulic Institute White Paper defines a product,	Informative	Committee/	N/A
		material, process or procedure with reference to one or		Standards Voting	
		more of the following: nomenclature, composition,		Representative (SVR)	
		construction, tolerances, operating characteristics,		/Peer Review	
		applications, performance, quality, rating, acceptability			
		criteria, testing and service for which designed.			
Body of	HI	A Hydraulic Institute Body of Knowledge, defines training	Informative	Committee/	10 Years
Knowledge		or knowledge requirements for the nump industry, which	intornative	Standards Visting	10 10015
KIIOwieuge					
		can be used by entities interested in developing training		Representative (SVR)	
		or certification for industry professionals.		/Peer Review	

5. Hydraulic Institute Committees: Structure and Participation

5.1 Required Practices

In order to ensure consistency between all committees under Technical Affairs, the following required practices are adhered to.

5.1.1 Antitrust Policy, Patent Policy and Export Control and Sanction Laws

As an industry trade organization, the Hydraulic Institute serves a legitimate and useful purpose, and may legally engage in a wide variety of activities which serve the industry so long as they do not violate antitrust laws. Antitrust considerations require that the Institute activities be structured so as to promote competition and the Institute must refrain from any activity that might be construed as unlawfully limiting competition among its members or with nonmembers of the Institute. See Exhibit 3 for the complete Antitrust Policy and Exhibit 4 for a note on Export Control and Sanction Laws.

Another particularly sensitive subject is patents. Should it come to light that a committee would potentially like to use patented material, it is imperative that the Chair contact the HI Technical Director for complete guidelines on how to proceed.

5.1.2 Lack of Dominance

The publication development and approval process shall not be dominated by an individual, or organization. Dominance means a position or exercise of dominant authority, leadership, or influence by reason of superior leverage, strength, or representation to the exclusion of fair and equitable consideration of other viewpoints.

5.1.3 Due Process and Balance Requirement (ANSI Canvass)

Due process means that any person (organization, company, government agency, individual, and the like) with a direct and material interest has a right to participate as a voting member of the consensus body. Participation shall be open to all persons who are directly and materially affected by the activity in question. There shall be no undue financial barriers to participation. Participation shall not be conditional upon membership in any organization, nor unreasonably restricted based on technical qualifications or other such requirement.

Technical committees are not required to have balanced interest categories, but ANSI canvass approval is required to have balanced interest categories.

5.2 Committee Roles, Responsibilities, and Expectations

When volunteering in an HI committee you will encounter a variety of roles in committee meetings. Table 5.2.1 outlines committee roles and responsibilities.

Role	Description	Responsibilities	Selection Process
Chair / Co-Chair	Primary volunteer of the project	 Sets committee direction and leads committee per the purpose, scope and deliverables Review Committee Handbook Approving the Agenda and Minutes Facilitating all Committee Meetings Support Committee Membership Recruitment Delegation of tasks to other committee members Reports to Standards Committee (directly at the Standards Committee meeting OR via the appropriate Section leadership) Reviews committee participation as needed Determines ideal meeting schedule in conjuncture with committee Voting Member of company for committee ballot Write foreword for publication (guidebooks only) If committee has Co-Chairs with no Vice-chair, both will support the leadership of the educational deliverables 	Self-Volunteered, nominated by Section Chair or other members and approved by the Standards Committee per HI's policy.
Vice-Chair	Secondary volunteer on the project	 Supports chair as needed and by facilitating committee meetings in the Chair's absence Review Committee Handbook Support the update of the draft Support Committee Membership Recruitment Lead the discussion and review of the roster, scope, purpose, and deliverable at each inperson meeting Responsible for leading the creation and presentation of educational deliverable Reviews committee participation as needed Voting member of company for committee ballot 	Chair solicits nominations and selects vice-chair per HI's policy.

Table 5.2.1 Committee Roles and Responsibilities



Member	Active participant in committee work by drafting/reviewing material as requested	 Being able and willing to take on work assignments. Providing technical input on topics being discussed in the committee. Attending two-thirds of meetings that are held in person and via web, replying to correspondence, and communicating by email, phone, or other electronic collaborative tools. Voting member of company for committee ballot 	Self-Volunteered
Alternate (to the	Active participant	 Being able and willing to take on work assignments. Providing technical input on tonics being discussed in the committee 	Self-Volunteered or selected by company's
Member)	by	 Attending two-thirds of meetings that are held in person and via web, replying to 	voting member
	drafting/reviewing material as	correspondence, and communicating by email, phone, or other electronic collaborative tools.	
	requested	Voting member of company for committee ballot if member is not able to	
Information	Curious By Stander	Receives committee correspondence to stay informed	Self-Volunteered
Only		 No active participation in committee work except for attendance of calls/meetings 	
		 No voting rights for committee ballot 	
		Does not count towards quorum	
HI Staff	Project Manager	Draft the Agenda and Minutes	Assigned by Technical
		 Distribute Agenda and Minutes to all pertinent committee members 	Director
		 Assist with scheduling and facilitating all Committee Meetings (both in person and online) 	
		Support Committee Membership Recruitment	
		 Responsible for Document Deliverable (balloting and publication process) 	
		 Responsible for educational deliverable (creation and presentation) 	
		 Submits all ANSI forms/paperwork (if ANSI document) 	
		 Reports on behalf of committee to Standards/ TASC committees as needed if committee leadership is not able to attend 	

5.2.1 Quorum

In order to take official committee actions, a quorum must be present. Quorum is determined by a minimum of one-third of the voting member companies on the committee roster being in attendance. Alternates may be counted as voting members if the voting member of their company is not present. First time attendees that elect to participate as a member or alternate can count towards quorum if needed.

If there is quorum is not met, discussions can be held, but the committee cannot take official action (such as approving minutes, any dispositioning of technical comments, voting on changes to purpose and scope, etc.). The committee can propose actions or changes, but they cannot be finalized until quorum is present at a future meet or distributed to the committee for approval via letter ballot.

5.3 Committee Leadership

5.3.1 Selecting Leadership

When a technical committee is approved by the Standards Committee, the Standards Committee is also responsible for approving the Chair or Co-Chair position(s) following HI's Chair Selection policy. See **Exhibit 12**.

5.3.2 Unexpected Changes in Leadership

Occasionally, committee leadership will step away from their role. Below is some guidance for HI staff and committee leadership to follow:

- **Chair Steps Down:** If a Committee Chair determines that they are no longer able to perform these duties, the Vice-Chair will be asked to support leadership until a new Chair can be approved by the Standards Committee. The Section Chair will consult with the Vice-chair and committee members to solicit Chair nominations to be considered by the Standards Committee at their next meeting.
- Vice-Chair Steps Down: If a committee Vice Chair is no longer able to perform these duties, they will advise the Chair and the Chair will solicit nominations and select a Vice-Chair per HI's Chair selection policy.

5.4 Reviewing Committee Roster from HI Staff

HI staff will review the committee roster 1) prior to every HI conference and 2) if the quorum the committee is not able to achieve quorum. When reviewing the roster, HI staff will be looking for those who are actively participating in the committee work. "Actively Participate" is defined at a minimum to be:

• Regularly attend at least 66% of all meetings;

HYDRAULIC INSTITUTE

- Take on committee assignments at such meetings;
- Complete such assignments, as agreed, in a timely manner and

Those who do not meet "active participant" will be reported to the Chair and Vice-Chair and listed as "information only" on the roster. HI staff will communicate with individuals of their adjusted status with an accompanying explanation. Those who wish to return to member/alternate status by committing to the active participation criteria.

5.5 Best Practices for Committee Leadership

Committee Chairs are responsible for moving the meeting forward by utilizing the agenda to stay on topic. It is the Chair's responsibility to communicate all rules, policies, and related matters to the members of the committee. The Vice-Chair, if requested, may assist with any of the Chair's responsibilities. It is important to recognize the opinions and insight of all members equally. Clarification on these practices can be brought up to the HI staff supporting the committee to discuss at any point.

5.5.1 Committee Leadership Guidance

Below are some best practices for committee leadership to consider.

- **Purpose and scope.** The purpose and scope should be used to focus the committee's efforts. It should be reviewed by the committee on a regular basis to keep the committee focused on the deliverable. If at any time the committee recommends any substantive changes, these changes must be reviewed and approved by the Standards Committee.
 - Substantive Changes such as: Change from a guideline to a standard, expansion, or contraction of the scope, etc. A substantive change is one that directly and materially affects the use of the publication. Examples of substantive changes are below:
 - "shall" to "should" or "should" to "shall";
 - addition, deletion or revision of requirements, regardless of the number of changes;
 - addition of mandatory compliance with referenced standards

• Communicate expectations with HI staff.

- Project Management: Discuss with HI staff the level and type of support you will require (e.g. document management/ reoccurring meetings/ reminders for assignments/ schedule and milestones within the agreed to production timeline, etc.)
- Meetings: Agree to the level of support that you want/need from HI staff during the committee meetings. (e.g. who is taking notes, who is sharing their screen and making edits to the document(s), who is keeping the committee on task)
- \circ $\;$ This level of support can be adjusted during the life of the committee.

• Utilize guidance on document development steps and timelines. When a committee is initiated, its first task should be to select the appropriate timeline. The steps and publication



type timelines are detailed in section 4.2.1. These timelines should be utilized by committee leadership for setting goals to deliver a successful publication.

• Set the goals. As leadership, you are encouraged to set a direction with an end goal and path detailed. Define the style of the collaboration (e.g. use of workgroups, frequency of meetings) and develop a plan for communication with both the committee.

- Production Timelines: Follow the guidance detailed in Section 4.2.
- Committee Meetings: Follow the guidance detailed in Section 6.6.

5.5 Resolving Conflict – Roberts Rules of Order

The Hydraulic Institute relies on Roberts Rules of Order when formality becomes necessary. When a discussion has resulted in a dispute, the Chair may wish to call a break in the meeting for the individuals to discuss this matter 'off-line'. Upon reconvening, the Chair will request from one individual the status of the conversation. If resolution is found it will be noted in the minutes, if the disagreement has not been resolved amicably, the Chair may elect to:

- Assign the individuals an action item and a date for submission with a status.
- Request the individuals research their points of view and provide material to the Chair for review and consideration. The Chair may then put the topic on the agenda for the next meeting.
- Postpone the conversation to the end of the meeting so that the committee may move forward with the remaining agenda items.

Roberts Rules of Order may also be useful when considering collusion of antitrust issues (refer to section 5.1.1 and **Exhibit 3**). For more information on Roberts Rules of Order, visit <u>www.rulesonline.com</u>.

6. Committee Meetings: What to Expect and Best Practices

6.1 Meeting frequency

Committees typically hold three in-person meetings a year coinciding with the HI Annual, Technical and Fall Conferences. Committees often meet virtually between the in-person meetings to meet the document deliverable timelines. The schedule of interim meetings is set by the Chair in review with the committee, and typically depends on the stage of document development and the type of work the committee is doing.

6.2 Committee Launch Following Standards Committee Approval

Once a NWIP including purpose and scope has been approved by the Standards Committee, the new Committee Chair may then request HI Staff to arrange the first committee meeting at the next HI conference. The formation of the committee will be publicly announced, and the HI staff assigned to the committee will manage the committee roster.



Prior to the first meeting, the Chair will work with HI staff to develop an agenda and set initial deliverable deadlines per the development steps and timelines outlined in section 4.2.1. The focus of the first meeting should have extra attention on soliciting committee membership, thorough review and setting of the purpose and scope, review of deliverable timelines, and setting a scope of work and path forward based on the deliverable timelines.

At this meeting the committee should agree to a purpose and scope for remainder of the development, and adjust deliverable timelines as needed.

6.3 Meeting Agendas

In-person meetings held at HI's conferences will follow a formal agenda. The agenda is prepared by HI Staff and approved by the Chair within two weeks of the meeting. The finalized agenda will be posted on the committee's Team as well. See **Exhibit 5** for an example of an in-person committee meeting agenda.

Committees and work groups of committees regularly meeting via the web between conferences. These interim meetings do not need to follow a formal agenda, but when the meetings are created the purpose of the meetings should be stated, and a summary of the meeting with actions should be distributed following the meeting.

6.4 What to Expect at an In-Person Committee Meeting

Most committees will meet at each of HI's three conferences (typically February, June and October every year). With rare exceptions, participation in a committee meeting at a HI conference requires inperson attendance. Call-in options are rare exceptions made per HI's remote meeting policy. See Exhibit 13.

At the beginning of the meeting, a sign-in sheet is circulated where committee members/alternates can sign in and attendees can notify HI staff they are interested in joining the committee. HI staff will check the sign-in sheet for quorum. Once quorum is determined to be present (i.e. 1/3 of the voting membership of the committee), the meeting can begin. If quorum is not present, attendees who wish to join the committee can be counted toward the quorum count.

The meeting will then follow the formal agenda (see **Exhibit 5** for example) with the Chair of the committee leading most discussion and the Vice-Chair reviewing the purpose, scope and deliverables. The majority of the meeting is spent on spent on tasks such as outline review and confirmation, summary of progress and outstanding actions, review of prepared content or recommendations from prior action items, or comment review and disposition. Items such as the previous in-person meeting minutes, any edits to the purpose, scope, and deliverables, and adjournment are determined via a motion to approve. Other items that significantly change the document or are of dispute are also motioned for approval so they can be documented in the meeting minutes.



HI staff is responsible for taking notes, resolutions, and action items during the meeting, and specifically summarizing action items and their due dates. These notes will be transferred into the official meeting minutes which will be made available to the committee on Teams and circulated prior to the next in-person meeting.

6.5 What to Expect from a Virtual Committee Meetings

The frequency of interim meetings is generally determined during the path forward agenda item at the committee's in-person meeting. Some Chairs will set recurring calls on the calendar while others opt for a more flexible schedule. Meeting times maybe set in the in person meeting or may be selected by polling (doodle poll) membership. Regardless of how often, it is encouraged for the committee to meet in between conferences if needed to meet the deliverable timeline.

All interim meetings are conducted via Microsoft Teams and are typically limited to one hour. HI staff is responsible for adding people to the Teams roster and ensuring members, alternates, and informationonly participants receive committee communication. If you do not use Microsoft Teams at your place of employment please make sure you are able to access the HI Teams site (either via the desktop app or browser) prior to the committee meeting. For more information on how HI uses Microsoft Teams please see section **7.1 Teams best Practices**

HI staff will start the meeting and conduct a roll call of attendees to ensure quorum is present. Once a quorum has been achieved, the Chair and/or Vice-Chair of the committee will lead the meeting. As the hour closes, HI staff will step in to inquire when the next meeting should be set (if not already a reoccurring call) and coordinate schedules accordingly. While no formal meeting minutes are required, a brief summary of action items and path forward should be agreed to and sent out by HI staff.

6.6 Best Practices for Running Committee and Workgroup Meetings

6.6.1 Best Practices for Running an In-Person or Virtual Meeting

- **Be on Time:** Arrive 5-10 minutes before the start of the meeting, if possible.
- Quorum: HI staff is responsible for noting when quorum is present.
- **Develop and follow agendas for committee meetings**: The agenda for a committee meeting should be determined by the Chair/Vice-Chair in conjunction with HI staff and be circulated to the entire committee prior to the meeting. The agenda should be used as a tool to keep the committee on task and focused.
- **Preparing before a committee meeting:** 1-2 days prior to the meeting, HI staff or Workgroup Leader should send out an email reminder with the purpose of the meeting and action items. For in-person meetings, the agendas are circulated by HI Marketing and Events staff.
- **Time management of a committee meeting:** It is the responsibility of the Chair to be aware of the time constraints of the meeting. Placing time parameters on the agenda may assist with time allocations. The Vice-Chair, if requested, may also serve to remind the Chair of time limitations on a particular agenda topic.



- Come Prepared, Focus Conversation, and Utilize Work Groups:
 - Focus Conversation: Being decisive is helpful. When discussions are getting off topic, restate the goals of the meeting agenda. If the committee feels further discussion is necessary, the committee leadership will recommend an individual or work group to review content offline and make a recommendation back to the committee. If a proposed edit/ content is found to be out of scope for the intended deliverable, committee leadership will refer edit/content to the appropriate committee for consideration.
 - Assignments Individual and Workgroups: Reviewing and editing document sections in a large group is counterproductive. Utilize committee members or workgroups to review and edit content to be shared with the full committee. The committee will discuss it at a future meeting.
 - Ballot Comment Review: Prior to a committee meeting, the committee leadership should review all comments and come prepared with a recommended disposition for committee consideration or specific ask for the committee to consider. Technical comments should be addressed with the committee. The remainder should be ranked and only the more substantive should be addressed with the larger group. This shall be discussed during the committee meeting.
 - Clearly state and record action item: Following discussion, summarize perspectives and make a recommendation for path forward and record action items. HI staff typically sends out the summary of action items.
 - For in-person meetings, note how much time the committee would like at the HI next conference.

6.6.2 Best Practices for Running a Working Group Virtual Meeting

The purpose of a workgroup is to focus on a specific topic and come prepared to the next committee meeting with a proposal.

- Typically, workgroups are comprised of 3-5 members.
- Workgroups are flexible and can meet for either the duration of a committee OR for a set period of time.
- 1-2 days prior to the meeting, HI staff or Workgroup Leader should send out an email reminder with the purpose of the meeting and action items.
- Workgroup leader needs to be present for a meeting to run.
- Schedule reoccurring virtual meetings if possible.
- HI staff to send out action items, volunteers, and due dates to entire workgroup after meeting.



6.7 Committee Meeting Minutes

HI Staff will produce draft minutes for all in-person meetings. The minutes will contain salient points from the meeting as well as any motions, action items, future business, next meeting information and any attachments will be noted at the bottom of the minutes. HI Staff will draft the minutes within four (4) weeks from the end of the meeting, uploaded the draft minutes to the Microsoft Teams folder and provide the Chair a two-week period review and edit the minutes prior to notifying the committee that the minutes are available. The minutes will be reviewed and approved by the full committee at the next in-person meeting, but the minutes can be accessed by all committee members at all times. Refer to HI Minutes and Action Items Policy **Exhibit 6.**

6.8 Committee Action Items

Action items will be posted to Teams as well. The exception to that rule may be when any one member receives numerous action items. HI Staff will put together a listing of all of the member's action items and post it to the committee's Teams site. All action items assigned during the meeting will have a due date designated in the minutes. Refer to HI Minutes and Action Items Policy Exhibit 6.

There will be times that an action item will be handled by a small workgroup of committee members. The Chair should ask for one committee member to take the lead role. This individual will be the one to report back to the committee with their findings. This working group may have discussions outside of the committee meetings or hold teleconferences as necessary without the necessity of minutes. The Chair may elect to be copied on the working group correspondence.

The working group leader will provide the recommendations of the work group to the committee. The committee as a whole will determine during a committee meeting or during the committee ballot whether or not workgroup recommendations are approved. Once work group leader hand off the material to the committee, the work group disbands. Should this material come into question later in the process, the same individuals may elect to revisit the material for further consideration and editing.

7. Document Development and Balloting Practices

This section of the Handbook outlines the stylistic requirements of HI publications. While this may be used by a committee during the development of a document, it will also be circulated to external vendors such as desktop publishers and copy editors. The intent is to create a streamlined process for publication.

7.1 Collaborating on Microsoft Teams

Hydraulic Institute committees use Microsoft Teams as the primary collaboration tool. HI staff manages a page on the HI website that provides up-to-date guidance on how committee members can work best in the Teams environment.

For more information please see https://www.pumps.org/working-within-microsoft-teams/

HYDRAULIC INSTITUTE

7.1.1 Best Practices for Teams at HI

- Ask the HI staff who is managing the committee about access to teams
- Do not download, edit, and re-upload a document you are actively collaborating with other committee members on
- Work within Teams whenever possible especially if collaborating with other committee members in a document
- Save files in the appropriate folder (see https://www.pumps.org/working-within-microsoft-teams/ for more information)
- Join HI committee meetings within the "HI Universe" by logging out of your company's Teams and signing in to HI's Teams

7.2 Overview of Balloting

Every document published by the Institute goes through a series of ballots all of which are conducted via email. There **are three types of ballots** issued throughout the draft development process: committee ballot, Standards Voting Representative (SVR) ballot, and ANSI Canvass ballot (or peer review), in that order. Invitations to participants in all ballots and the ballot are managed by HI Staff. Please see **Exhibit 7** for an example of language used in a committee ballot email.

7.2.1 Rounds of Balloting that Occur

The first two ballots are internal HI votes and are governed by the Hydraulic Institute Policies & Procedures.

- 1. The committee ballot includes the voting members or their alternate of the HI committee drafting the document.
- 2. The SVR ballot includes HI Standards Voting Representatives (SVRs) or their alternate (ASVR) which are representatives of HI Member and Associate Member companies. The SVRs might be outside of the committee membership.
- 3. The final ballot is the ANSI Canvass ballot, which utilizes the Consensus Committee Method. The requirements for the consensus body is governed by the ASNI *Essential Requirements*, which includes stakeholders outside of the HI committee and must meet a balance of interest (Producers, Users, and General Interest). At the same time as the ANSI Canvass ballot the document is announced for public review. Any public reviewers do not vote on the approval, but any comments submitted need to be dispositioned and responded to in a timely manner.

NOTE: HI publications that are not approved by ANSI go through a peer review period in lieu of the ANSI Canvass.

Table 7.2.1 below provides an overview of the balloting types.



Ballot Round	Who Participates in the Ballot	Parameters	Committee Action
Committee (Internal to HI) Standards Voting	Voting members of a company that is on the committee roster at the time of the committee ballot. An alternate may cast a ballot if the member is unable to do so. A company's assigned Standards Voting Representative or	 30 calendar days 1/3 of the voting body must cast ballot inclusive of abstentions 2/3 of the votes cast (excluding 	Following the close of the ballot, HI staff will compile the comments and tabulate
Representative (SVR)* (Internal to HI)	Alternate Standard Voting Representative.	abstentions) shall be affirmative, affirmative with comments	the ballots and send to the Committee leadership. The Chair and Vice-Chair will determine whether to include the committee or to enlist a small group of key committee members to review the
ANSI Canvass or Public Review (ANSI/HI documents only) (External of HI)	Those who respond to the open invitation to review the document. They are self- reported as "producer," "user," or "general interest".	 30-45 calendar days depending on the page length of the document Refer to HI's policy and Procedures for balance, quorum and approval 	comments and provide resolution. Consensus is important to continue to the next ballot before reaching final publication stages.
Peer Review (HI documents) (External of HI)	Those who respond to the open invitation to review the document.	 30 calendar days No voting	

Table 7.2.1 – Balloting Types and Timelines

* The SVR ballot and ANSI Canvass ballot may be issued concurrently with the committee Chair's approval.

7.2.2 Types of Ballots that can be Cast

Participants within a ballot have four options when casting:

- Affirmative
- Affirmative with Comments
- Negative with Comments (The voter must provide comment(s) as HI is not required by ANSI to address negative ballots without comment(s) AND must indicate which comment(s) caused the



negative ballot by putting a note in the comment box (online version) or highlighting that specific row(s) in yellow (offline version).

Abstain

Affirmative with comments and Negative with Comments *must* have a PDF file with their comments attached to their email in order for the ballot to be considered valid.

7.2.3 What to Expect from a Committee Ballot

The Committee Ballot is conducted once the document has reached a point where the committee needs to determine if it is ready to move forward to the next stage. By conducting the committee ballot, the committee agrees as a whole to 'sign off' on the document. Below is a sequence for the committee ballot:

- Roster Review: Chair, Vice-Chair and HI staff review roster for quorum count
- PDF of Document: HI Staff will convert the document in PDF and include balloting instructions
- Email Launch: HI staff will send the PDF of the document and the committee roster to all participants within the ballot (members and alternates of a company) and the Director, Technical Affairs.
- **30 Day Ballot:** The committee typically does not meet during this time.
- **Committee Ballot Comment Review:** Chair, Vice-Chair and HI staff review ballot comments and determine path forward for review.

7.2.3.1 A Note on Commenting

Once members have access to the document, they will be instructed to post comments using the sticky notes option in Abode Acrobat. There are times that comments are not provided via the sticky notes tab (examples include spreadsheet format, Word format, or even mark-ups done by hand). It is imperative not to rely on those means. Please contact HI Staff prior to submission. All comments on the draft must be submitted to HI Staff before the ballot closes. Once the ballot closes HI Staff consolidates all comments into one master document for review. During the review of comments, only HI Staff will know the name of the commenter. The commenter may elect in review meetings to acknowledgment a comment as their organization.

7.2.3.2 A Note on Colleague Support for Committee Ballot

When the ballot is sent out to the voting committee member, that member may provide a copy of the document to fellow employees (please do not distribute this document outside your organization unless permission is granted from the HI Technical Director) for their review and comment. The draft will need to be downloaded to your computer and provide via email attachment. All comments shall be funneled back to HI through the voting member utilizing the appropriate commenting methods.

7.2.3.3 A Note on Negative Ballots



If any negative ballots are received, the Chair and HI Technical Director will make an effort to resolve the negative ballot. At this level, it is not a requirement that negative ballots be resolved. The "HI Operating Procedures" for committee balloting does not require resolution of negative ballots to move to the next balloting stage. If the negative ballot's resolution incorporates a substantive change, the committee must approve the change during a meeting with quorum present or the Chair may elect to issue recirculation ballot. The original committee member list will be utilized for this recirculation ballot. If no substantive changes are made to the draft, the document will move onto the next balloting stage.

7.2.4 What to Expect from a SVR Ballot

At the conclusion of the committee ballot comment review, the document typically undergoes its first round of desktop publishing. The next level of internal voting is for HI members' SVRs. Each company has the option of participating on a section-by-section basis. HI has five sections (rotodynamic, reciprocating, rotary, air operated, controlled volume metering, and systems section) that a member company can assign an SVR. The HI policy – 'one company (parent company/division/partner), one vote' applies. Should more than one section be represented within a particular standard and there are different individuals representing those sections from the same company, those individuals will be contacted so that an internal decision may be made as to which one will be participating in this particular SVR ballot.

SVRs are not required to participate on the committee in order to review the document. That said, it is not uncommon for a committee member to also the SVR or ASVR for a company and thus get to ballot on the document more than once.

The process and requirements for reviewing and casting a vote is the same as when conducting a Committee Ballot. Below is a sequence for the committee ballot:

- **SVR/ASVR Roster Review:** HI staff review report on SVR/ASVR to ensure accuracy and duplicates are removed.
- **PDF of Document:** HI Staff will convert the updated document in PDF and include balloting instructions.
- Email Launch: HI staff will send the PDF of the document to the SVR/ASVR list and the Director, Technical Affairs via email.
- **30 Day Ballot:** The committee typically does not meet during this time.
- **SVR Ballot Comment Review:** Chair, Vice-Chair and HI staff review ballot comments and determine path forward for review.

7.2.5 What to Expect from a Consensus Committee (ANSI Canvass) Ballot

The Consensus Committee (ANSI Canvass) Ballot is different from the two previous ballots in that it incorporates non-HI members into the review process. There are three categories of voters – Producers, Users, and General Interest. No one group may represent more than 50% of the total to



achieve balance. One of ANSI's key tenets for consensus balloting is a fair representation of the market place and the public.

The Consensus Committee Ballot period is 30 calendar days. At same time as this ballot, Notice is provided to ANSI so they can announce a 45-day public review.

The procedure and requirements for reviewing/voting remains the same as used for the Committee and SVR balloting. The substantive comments received during the Consensus Committee (ANSI Canvass) ballot are reviewed and dispositioned by the HI committee. Once negative ballots, if any, have been resolved to the best of HI's ability, the negative voter(s) will be sent a notification indicating the resolution along with the opportunity to re-cast their ballot. At this time, a Notice of Appeal is also provided to the negative voter as directed by ANSI *Essential Requirements*. The timeframe for reviewing/re-casting their ballot is 30 days. Once resolution has been received or the timeframe has ended, the document will be sent back to the desktop publisher for final editing.

Should any of the canvass ballot comments necessitate a substantive change to the document, portion of the document including the substantive change(s) will go through a recirculation ballot and public review. The timeframe for this recirculation ballot is 30 days and will be sent to all participants of the canvass list. Once the recirculation ballot has closed, HI Staff will tabulate the responses to ensure that quorum was reached, and no additional negative votes have arisen. Any comments received because of the recirculation ballot will be handled in the same manner as described above.

Once all canvass ballot comments have been dispositioned without additional substantive change, HI Staff moves the document to desktop publishing and works with Chair to ensure proper implementation prior to final publication.

7.2.6 What to Expect from a Peer Review

For HI standards and guidelines that do not go through the process of ANSI approval, a review of the document from those outside the committee is an important stage of the credibility of standards and guidelines. A peer reviewer includes, but are not limited to, customers of member companies or others working in the pump industry, subject matter experts, co-workers within a member company who have not been involved with the draft development or who are not the Standards Voting Representative for a member company, etc.

Committee members are requested to submit nominations for peer reviewers. A reviewer is given 30 calendar days to review the document and provide feedback. A peer review can be done at the same time as an SVR ballot. The reviewer does not have a voting right – only to provide comments on the content of the document. Once the feedback is provided, the committee addresses all feedback. The document then proceeds with desktop publishing and professional copy editing.

7.3 Hydraulic Institute Publication Style Guide

7.3.1 Language Practices

7.3.1.1 Plagiarism

It is essential for all HI members and Standards to recognize that plagiarism in any form, at any level, is unacceptable and is considered a serious breach of professional conduct, with potentially serve ethical and legal consequences. Refer to HI Policy on Plagiarism, in **Exhibit 8**.

7.3.1.2 Guidance on Special Word Usage

Hydraulic Institute Standards will strive to be normative but historically, documents produced have contained a mix of normative and informative material. That remains acceptable practice. That said, there are some publications that are normative by design and others that are purely meant to be informative. See 4.3 Table on Publication Types and Publication Timelines for the specific publication types that are normative, and which are informative.

Below is a list of language descriptions and guidance on when to use specific language.

- "Shall", "should", "may", "can", and "recommended":
 - The word "shall" is used to indicate mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted ("shall" equals "is required to").
 - The use of the word "must" is discouraged and shall not be used when stating mandatory requirements; "must" is used only to describe unavoidable situations.
 - The use of the word "will" is discouraged and shall not be used when stating mandatory requirements; "will" is only used in statements of fact.
 - The word "should" is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain course of action is discouraged but not prohibited ("should" equals "is recommended that").
 - The word "may" is used to indicate a course of action permissible within the limits of the standard ("may" equals "is permitted").
 - The word "can" is used for statements of possibility and capability, whether material, physical, or causal ("can" equals "is able to").
- "That" and "which": The words "that" and "which" are commonly misused; they are not interchangeable. "That" is best reserved in essential (or restrictive) clauses, "which" is appropriate in nonessential (or nonrestrictive), parenthetical clauses. Simply stated, if a comma can be inserted before the word "that" or "which", the word should be "which". If a comma would not be used, the word to use is "that".



- **"And/or":** The term "and/or" shall be avoided and, wherever possible the statement shall be rewritten to clarify the meaning. For example: Nuts, or screws, or bolts, or a combination thereof; not, nuts, screws, and/or bolts
- Nouns and Adjectives: Nouns may be used as adjectives, provided these adjectives are no longer than three words.
- Non-technical Expressions: Non-technical expressions should be used wherever possible. If unusual terms are used, they should be defined.

7.3.2 Numbering of HI Publications

In 2016, the Standards committee determined an improved method for numbering HI standards. This section provides an overview of the numbering logic for HI publications and guidance for how numbering of sections/sub-sections should look within a document.

NOTE: As of 2021, HI and ANSI/HI Standards are no longer required to have an index of the document. Guidebooks published by the Institute will still have an index made.

7.3.2.1 Overview of HI Numbering Logic

The majority of HI publications (with the exception of guidebooks and white papers) have a number at the beginning of the title. This number has two sections: the first number in the sequence identifies the pump type and the second number identifies the content within the publication.

Example: ANSI/HI 11.6 covers Submersible – Rotodynamic (pump type assigned to 11) and the tests of this pump type (description of content assigned to 6). See tables 7.3.2.1.1 and 7.3.2.1.2 for a comprehensive list of these numbers. You will notice unassigned numbering which allows for future needs of the Institute.

First Number Sequence	Ритр Туре
1 (superseded)	Centrifugal (Superseded by 14 series)
2 (superseded)	Vertical (Superseded by 14 series)
3	Rotary
4	Sealless Rotary
5	Sealless Rotodyanmic
6	Reciprocating Power
7	Controlled Volume Metering

able 7.3.2.1.1 First Number in Sequence an	d Corresponding Pump Type
--	---------------------------
8	Direct Acting Reciprocating
----	--
9	Pumps – General
10	Air Operated
11	Submersible - Rotodynamic
12	Slurry - Rotodynamic
13	Unassigned
14	Rotodynamic Pumps (Absorbs superseded 1
	series and 2 series)
15	Unassigned
16	Unassigned
17	Unassigned
18	Unassigned
19	Unassigned
20	HI Guideline – Pumps-General
30	HI Specifications
40	Energy Efficiency, Regulatory, Certification, or
	Training Related
50	HI Standard: Software – Electronic Data Entry

Table 7.3.2.1.2 Second Number in Sequence and Corresponding Description of Content

Second Number Sequence	Description
1	Types and Nomenclature
2	Definitions
3	Design and Applications
4	Installation, Operation & Maintenance



5	Product Certification or Miscellaneous
6	Test
7	Process Certification or Miscellaneous
8	Personnel Certification or Miscellaneous
9	Training document or Miscellaneous

Please ask HI staff for the current catalog of publications or the cross-reference document to ensure your standards are up-to-date.

7.3.2.2 Numbering Sequence for a Single Standard

All HI or ANSI/HI Standards published after 2016 (including revisions of existing standards) will need to subscribe to the numbering format below for a single standard. Example could be 14.3 Rotodynamic Pump Design & Application.

The sequence for a single standard is as follows:

<u>Foreword</u> – HI Boilerplate, HI mission statement, definition of a standard or guideline, disclaimer and committee & canvass lists. This is the same for all HI standards or HI guidelines with the only change being the committee & canvass lists.

<u>Preamble</u> – General background and history, changes from previous edition and limits or requests for data.

xx.x Full title only, no text following (i.e. 14.3 Rotodynamic Pump Design & Application)

xx.x.1 Introduction

xx.x.1.1 Purpose (Purpose statement of the document) xx.x.1.2 Scope (Scope statement) xx.x.1.3 Units, Symbols & Subscripts

xx.x.2 Main body of the standard

xx.x.2.1 xx.x.2.1.1 xx.x.2.2 xx.x.2.2.1 xx.x.3 xx.x.4 etc.



Appendices ordered as followed

- 1. Normative
- 2. Informative
- 3. References
- 4. Conversion factors

7.3.2.3 Numbering Sequence for a Multiple Standard

All HI or ANSI/HI Standards published after 2016 (including revisions of existing standards) will need to subscribe to the numbering format below for a multi-section standard. Example could be 12.1-12.6 Slurry Pumps.

The sequence for a single standard is as follows:

<u>Foreword</u> – HI Boilerplate, HI mission statement, definition of a standard or guideline, disclaimer and committee & canvass lists. This is the same for all HI standards or HI guidelines with the only change being the committee & canvass lists.

<u>Preamble</u> – General background and history, changes from previous edition and limits or requests for data.

xx Main title only, no text following (i.e. 12 Rotodynamic Centrifugal Slurry Pumps)

xx.0 Introduction

xx.0.1 Purpose (Purpose statement of the document)

xx.0.2 Scope (Scope statement)

xx.0.3 Units, Symbols & Subscripts

xx.1 Types & Nomenclature

xx.1.1 Purpose Types Nomenclature

xx.1.2

xx.1.2.1

etc.

xx.2 Definitions

xx.2.1 Purpose Definitions

xx.3 Design & Application



xx.4 Installation, Operation & Maintenance

xx.5 (Page intentionally left blank)

xx.6 Test

Appendices ordered as followed

- 1. Normative
- 2. Informative
- 3. References
- 4. Conversion factors

7.3.2.4 Numbering Sequence for a Guidebook

Guidebooks follow a chapter structure versus a section structure found in Standards. Chapters are numbered and sub-sections within that chapter follow numerically. See example below taken from the Commercial Building Services Guidebook published in 2019:

Chapter • Three Pumping Fundamentals and Pump Selection Considerations, 7

3.1	Pump	Selection Considerations and Guide Instructions
3.2	HI Sta	ndards and References9
	3.2.1	HI Standards
	3.2.2	HI Pump References
3.3	Site C	onditions
	3.3.1	Installation Space15
	3.3.2	Piping Alignments
	3.3.3	Wet Well Depth15
	3.3.4	Interior/Exterior Installations
	3.3.5	Power

Should the committee decide to include appendices at the end of the document they will be ordered alphabetically and sub-sections numerically. For more information on the appendices see section 7.3.7. See example below taken from the Commercial Building Services Guidebook published in 2019:



Appendix D Seal Selection, 125

D.1	Mecha	nical Packing
D.2	Mecha	nical Seals
D.3	Mecha	nical Seal Installation Considerations
D.4	Piping	Plans and Bushings
	D.4.1	Single Seals
	D.4.2	Dual Seals145

Appendix E Image Credits, 149

Appendix F Bibliography, 151

> Appendix G Index, 153

7.3.3 Equation Format

After months of research, the HI Standards committee met in June 2020 and concluded the following:

- HI will follow the Chicago Manual of Style
- HI will use the dot method for multiplication when numbers and variables are used
- HI will use the dot method for multiplication when with spaces are in the formula
- HI will use the multiplication symbol × when examples with numbers are used
- HI will use a leading zero with decimals (i.e. 0.14)
- Fractions hyphenate as adjective (a two-thirds majority), no hyphen as noun (example: one half of the population)
- Usually not numbered, variables in italics. Variables are listed under "Where:"
- Units of Measure: In equations, use abbreviated units unless the unit is being used for the first time in the standard, then spell out the unit and put the abbreviation in parenthesis, e.g., meter (m).
- Variables Italicize in equations, lists, and text
- When used, tie to section or appendix number: (Eq. 4.3.2-1) or (Eq. A.1-1)
- When used within the text of the document: Equation 9.8-2
- Numbers Guideline: No comma in four-digit numbers, spell one through nine, use numerals for all units of measure, round metric numbers to within 5%

Examples of Recommendation:

$$H = z_2 - z_1 + \frac{p_2 - p_1}{\rho_m \cdot g} + \frac{U_2^2 - U_1^2}{2 \cdot g}$$

$$F_R = K_R \cdot H \cdot \rho \cdot g \cdot D_2 \cdot b_2$$
 OR $F_R = 0.2 \times 100 \times 0.001 \times 32 \times 10 \times 0.25$



• Example of Equation with Variables Listed – ANSI/HI 10.1-10.5:

10.2.2.6.1 Elevation pressure (pz)

The potential energy of the liquid due to a difference in elevation between the liquid and the pump datum (10.2.1.9) expressed in terms of equivalent pressure. It is determined as follows:

 $p_7 = z \cdot \rho \cdot g$ (Generic form)

Where:

z is vertical distance

ρ is fluid density

g is gravitational acceleration

 $p_z = \frac{z \cdot sG}{0.102}$ (Metric units)

Where:

 p_z is in kPa

z is in m

sG is unitless specific gravity of fluid

 $p_z = \frac{z \cdot sG}{2.31}$ (US customary units) p_z is in psi z is in ft sG is unitless specific gravity of fluid

7.3.4 Units of Measurement

Hydraulic Institute uses both metric and imperial units within publications. The International System of Units (SI) are the preferred units of measurement. Where dimensional values appear, the Metric shall be the primary value with the U.S. units in parentheses. HI's policy is that all standards (ANSI/HI and HI) shall be published using dual units in a single document. All values shall be rounded to acceptable values in both Metric and U.S. units, and not necessarily mathematical equivalents.

Given the technical nature of the Institute, it is best practice to refer to the symbols section of ANSI/HI 14.1-14.2 Rotodynamic Pumps for Nomenclature and Definitions for common spelling and abbreviations. See **Exhibit 9** for tables 14.2.a – Principal symbols and 14.2.b Subscripts

Best practices for Units of Measurement:

- Dual units are indicated by "metric (US)"
- In equations see Equation Guideline
- In text, spell out when standing alone, and abbreviate when used with numbers.
- Also, when standing alone and spelled out, units should be made
- Singular for metric and US. Stokes carries an "s" because it was named after Sir Stokes, but the abbreviation is St)."
- Use singular in Symbols tables
- Units should be abbreviated when they appear on figures axis labels, captions, and table heads



7.3.5 Images

7.3.5.1 File type/sizing

When submitting a graphic for publication please note that submitting a raw file is always preferred (.eps file type) but a high resolution image will also be accepted (300+ ppi and .jpg or .png format exported as RGB for screens or CMYK for print). To prevent confusion, below are definitions for drawings vs. images.

Drawings: created/provided by committee members considered to be donated for the use of the publication/educational material.

Images: property of a company that requires a filled out permission form for use

The use of graphics in technical documents has been regulated to accommodate the review of the document at the desktop publisher stage

7.3.5.2 Copyright Images and Permission Form

When creating a publication, product or course it is imperative that copyright laws be followed and proper documentation be kept. According to Merriam-Webster, copyright is the exclusive legal right to reproduce, publish, sell, or distribute the matter and form of something (such as a literary, musical, or artistic work). Within HI, copyright can impact the use of a particular figure, graph, or image in a publication or product.

To ensure that copyright be followed, HI has created two distinct forms: one to use when granting permission to use HI copyrighted material, and the other to use when asking for permission to use another organization's copyrighted material. Please ask HI staff for the appropriate form when submitting images for a publication.

Intellectual property is provided when working in a committee structure. There is a distinction between the content that is provided by HI Member companies/sponsors and the content that is sourced outside of the HI Member body. Most of the content (images/graphs/graphics) should come from HI Member companies/sponsors.

NOTE: By participating on a committee, you are agreeing that all content provided is free of copyright or permission is granted by the member's organization for the Hydraulic Institute to republish and use for the committee's purpose and all deliverables and derivatives. Any content provided that is not free of copyright or owned by the member's organization must be brought to the attention of HI Staff so that copyright release can be sought. Refer to HI Policy on Plagiarism in Exhibit 8.

There are specific ways an image should be credited depending on the publication type. Below is guidance:



- Guidebooks:
 - At the end of the guidebook appendices there is a list of all images with the credit line. This is called the Image Credits Appendix.
- Standards:
 - There is no credit line and/or image credits appendix within ANSI/HI or HI Standards because standards must remain product neutral.
- White Papers:
 - If applicable, the committee can create an appendix for images. This is not a necessary step in the white paper development.
- Webinars:
 - There is no credit line and/or image credits to achieve product neutrality. If an
 organization outside of HI membership will only provide an image with credit, an image
 credit slide at the end of the presentation can be added.
- PSM Courses:
 - There is no credit line and/or image credits with the example of external (not an HI Member Company/ not eligible for HI Membership/Sponsorship)

7.3.6 Foreword Boiler Plates

HI maintains two forewords. One for ANSI/HI standards and another for all other HI publications (with the exception of HI Guidebooks). The foreword language is managed by the Manager, Technical Publications who provides updates to desktop publisher as needed. The committee roster, consensus body, and peer review (if applicable) are shown in the foreword.

Please see Exhibit 10 for examples of the foreword

7.3.7 Publication Data Pages

Publication data pages are at the beginning of the document just after the title page. These pages hold the copyright year, ISBN number, and a description of the publication type. Please see **Exhibit 11** for examples.

7.3.8 Formatting Appendices

Normative appendices will precede informational appendices for all ANSI/HI publications.

- Appendix A capped
- Appendix title first letter only capped, (informative) and (normative) when used appear after the appendix title and header. Check that either informative or normative is listed. Ask HI Staff for clarity if needed.
- Appendix numbering
 - Figures: A.1, A.2, etc.
 - Sections: A.1, A.2, etc.

7.3.9 Formatting Tables and Figures

• *Italics* for variables



- Figure numbering use section number in which figure referenced, if more than one use a, b; if figure within figure use i, ii, iii etc., e.g., Figure 2.3.1a-i
 - o axis units abbreviate
- Figure titles are centered to the image
- Figure titles are below the image
- Figure titles that are continued, use (continued)
- Table titles are centered to the table
- Table titles are above the table
- Table subscripts can be indicated with either * or lowercase a, b, c, etc. and reside under the table
- Tables referenced to section in which call out occurs
 - continued tables, include *(continued)* in title each page
 - o footnotes, use super letter
 - o words in tables are usually lower case

• Example – ANSI/HI 14.1-14.2:

Part Name	Number	Abbreviation	Definition
Adapter	71	Adpt	A piece used to permit assembly of two other parts or for a spacer.
Adapter, tube	195	Adpt, tube	A piece that connects the shaft enclosing tube to the discharge case.
Assembly, motor rotor core	222	Assy rtr core	The rotating assembly of an electrical machine containing laminations and conductors, which, when interacting with stator core assembly, produces torque.
Assembly, motor stator core	223	Assy sttr core	The fixed assembly of an electrical machine containing laminations and windings that creates magnetic fields.
Barrel or can, suction	205	BI/can suc	A receptacle for conveying the liquid to the pump.
Base	53	Base	A structure to support a pump.
Base, pump suction/ discharge	59	Base, pump suction/ discharge	Component directing flow to and from the multistage pump through in-line nozzles. Component also acts as the pump mounting base.
Baseplate	23	Base pl	A member on which the pump and its driver are mounted.
Bearing, inboard	16	Brg inbd	The bearing nearest the coupling of a between-bearing pump but farthest from the coupling of an end suction pump.
Bearing, lineshaft enclosed	103	Brg linesht encl	A bearing that also serves to couple portions of the shaft enclosing tube.
Bearing, outboard	18	Brg outbd	The bearing most distant from the coupling of a between-bearing pump but nearest to the coupling of an end suction pump.
Bearing, sleeve	39	Brg slv	A replaceable, cylindrical bearing which is in contact with the journal.
Bearing, throttle	102	Brg thi	A replaceable, cylindrical bearing used to reduce pressure and keep water from entering the tube line.
Bell, end	271	Bell end	The end bell performs two functions. First, it acts as a cover for the rotating assembly. Second, it provides a support for the manifold.
Bell, suction	55	Bell suct	A flared tubular section for directing the flow of liquid into the pump.
Bowl, discharge	15	Bowl disch	A diffuser of an axial flow or mixed flow or turbine pump.



7.3.10 Formatting Bullet Points

- Capitalize the first word
- Do not have period at the end unless there is more than one sentence
- Hierarchy: bullets, em dashes, circles
- Example Dynamic forces: Static Forces, Vertically suspended pumps ANSI/HI 14.3:

St	atic forces, vertically suspended pumps
In wa	vertically suspended pumps, the weights of the following components are added to the axial thrust in the down- ard direction:
•	Impeller(s)
•	Bowl shaft
•	Lineshaft
•	Lineshaft couplings
•	Shaft sleeve(s)
•	Shaft through driver (if applicable)
•	Driver to pump shaft coupling (solid-shaft driver)
•	Adjusting nut (hollow-shaft driver)

7.3.11 HI Branded Colors and Fonts

Hydraulic Institute publications use Helvetica font (normal, italic, bold) in the size 10 with black ink. Standards are printed in black and white whereas guidebooks are printed in color. As a reference for committee members and vendors alike, below are the brand colors for the Institute:

Color Palette Specifications

Color Usage Guideline

- Use CMYK colors when 4-color printing is available
- Use Pantone colors when printing with more than 4-colors or fewer than three colors
- Use RGB colors for screen-based applications, such as PowerPoint presentations, HTML e-emails, and television monitors
- Use Hexadecimal colors when creating web pages and any related applications, such as banner advertisements

 Pantone (spot)	CMYK (print)	RGB (screen)	Hexadecimal (web)
PMS 432 C	C74 M64 Y34 K35	R51 G62 B72	#333e48
PMS 7545 C	C79 M62 Y34 K14	R70 G91 B121	#465b79
PMS 3135 C	C84 M34 Y27 K1	R2 G141 B168	#028da7
PMS 157 C	C0 M42 Y74 K0	R255 G148 B66	#ff9442
PMS 1815 C	C16 M97 Y86 K54	R128 G36 B40	#802428
PMS 5473 C	C86 M20 Y32 K51	R0 G90 B101	#005a65
N/A	C0 M0 Y0 K100	R0 G0 B0	#000000

7.3.12 Formatting Footnotes

- Within text, text superscript numbers¹, in figures and tables, list by superscript letters^a
 - Example: in tables, footnote order from left to right, top to bottom
- **Example** Outside of text Footnote style:
 - Knauss, J., Coordinator-Editor, "Swirling Flow Problems at Intakes," *IAHR Hydraulic Structures Design Manual 1*,
 - A.A. Balkema Publishers, Rotterdam, 1987.
 - Padmanabhan, M., and Hecker, G.E., "Scale Effects in Pump Sump Models," *ASCE Journal of Hydraulic Engineering*, Vol. 110, No. 11, November, 1984, p. 1540.
 - Hecker, G.E., Chapter 8, Conclusions, "Swirling Flow Problems at Intakes," IAHR Hydraulic Structures Design Manual 1, J. Knauss, Coordinator-editor, A.A. Balkema, Rotterdam, 1987.
 - Chaudhry M.H., Open-Channel Flow, Prentice Hall, Englewood Cliffs, N.J., 1993.
 - Chow, V.T., *Open-Channel Hydraulics*, McGraw-Hill, New York, NY, 1959.

7.3.13 Check Lists for Interior Pages of Publication

These check lists can be used by HI Staff, outside vendors, and committee leadership prior to final publication of the document.



For ANSI/HI Standards

In Order of Appearance	Included
Interior Title Page (has ANSI Approval Date)	
American National Standard Boilerplate/Publication Data Page	
Table of Contents	
ANSI/HI Foreword Boilerplate (includes consensus and committee list)	
Body of the standard (majority of the document)	
As Needed Normative Appendices	
As Needed Informational Appendices	
References Appendix	

For HI Guidebooks

HI Guidebooks are not subject to ANSI processes. That said, consistency of the interior between guidebooks is paramount.

In Order of Appearance	Included
Interior Title Page (has complete name of document)	
Publication Data Page and Notice	
About the Hydraulic Institute Page	
About Pump Systems Matter Page	
Table of Contents	
Foreword (includes peer review and committee list)	
Body of the guidebook (majority of the document)	
As Needed Informational Appendices	
Image Credits Appendix	



Bibliography Appendix	
Index Appendix	

For HI Standards/ Program Guidelines/ Specifications

In Order of Appearance	Included
Interior Title Page (has HI Approval Date)	
HI Standard Boilerplate/Publication Data Page	
Table of Contents	
Boilerplate Foreword (includes consensus and committee list)	
Body of the standard (majority of the document)	
As Needed Informational Appendices	
References Appendix	
Index Appendix	

For HI White Papers

An HI White Paper is a free publication which typically runs small compared to other documents HI publishes. Because they do not get printed, White Paper documents do not require a publication data page.

In Order of Appearance	Included
Cover Page	
HI Foreword Boilerplate (includes consensus and committee list)	
Body of the White Paper (majority of the document)	
As Needed Informational Appendices	
SKU Page	



8. FAQ about HI Committees

8.1 What happens when a chair leaves?

See section 5.3.2 Unexpected Changes in Leadership

8.2 What happens when an active participant leaves HI membership?

When a company leaves HI, employees from that company are no longer eligible for committee participation. The Chair and HI staff should write down a list of responsibilities held that by the individual and reassign as needed.

Keep formerly active participants in mind when considering candidates for peer review

8.3 How do I access forms? (NWIP/ Permission for Image/ etc.)

It is best practice to ask HI staff for the most current NWIP or Permissions form.

8.4 How do I access Teams?

<u>Click here</u> to learn more about accessing teams on your Teams App.

8.5 I am new to HI, how do I get involved?

Send an email to <u>HITechnical@pumps.org</u> and ask what committees are currently seeking members.

8.6 I can no longer support HI committee work because of my work schedule but want to remain informed. What do I do?

You can always voluntarily opt to become an "information only" designation on a committee. This will keep you in the loop for emails, committee ballot, and comment disposition. Additionally, stay connected with our newsletter and follow us on LinkedIn.



9. Exhibits

Exhibit 1: New Work Item Proposal

Title of deliverable	
Proposed by	
Contact Information	
Date	
Governing Section	
Please indicate the pro	posed publication type:
a) American I	National Standard
Norm	ative standard
Inforr	native guideline
b) HI standard	d
c) HI guidelin	e
d) Guidebook	
e) Technical v	white paper
f) Education	
Purpose of the	
committee	
Scope of document	



Proposed outline &	
main content of	
document	

Market Case

Importance – Indicate which of these drivers apply

Rank	Affiliation	Driver	Indicate or Comment
A	Strategic	BOD Strategic Plan	
В	Government Affairs	Regulatory	
С	Technical Affairs	National Standards	
D	PSM and ESC	Education	
E	Member Service	Required by Members	
F	Technical Affairs	Liaison	

Urgency – Indication of the need to complete

		Driver	Indicate or Comment
1	Regulatory Timetable	Regulatory- Legislation	
1	ANSI Timetable	National Standards	
2	HI Timetable	Liaison - Education	
2	Budgetary Timetable	Cash Flow - Revenue Targets -	

Demand – Based on knowledge of the Market -

	Driver	Indicate
Specification	Customer - Specifier - Standards body	

HYDRAULIC INSTITUTE

Best Practice	Customer - Specifier - Standards body	
Guideline	Customer - Members - Affiliation	
Education Module	Customer - Members - Affiliation	

Resources - Identification of work group participants

	Technical Affairs		Indicate names
		Section Leader	
		Available HI Staffing	
		Subject Matter Experts	
	Government Affairs		
		Section Leader	
		Available HI Staffing	
		Subject Matter Experts	
	Education Affairs		Indicate names
		Section Leader	
-		Available HI Staffing	
		Subject Matter Experts	

Exhibit 2: Organizational Chart of Technical Affairs





Exhibit 3: Hydraulic Institute Antitrust Policy

The Hydraulic Institute is a trade association of pump manufacturers and suppliers in North America. As an industry organization the Hydraulic Institute serves a legitimate and useful purpose, and may legally engage in a wide variety of activities which serve the industry — so long as they do not violate antitrust laws. Antitrust considerations require that Institute activities be structured so as to promote competition and the Institute must refrain from any activity that might be construed as unlawfully limiting competition among its members or with nonmembers of the Institute.

There are activities which the Institute can and should undertake which might later become illegal if they transform into devices for violating the antitrust laws. Because of the difficulty of determining what activities might become violations of antitrust, the following guidelines are presented so that no member of the Institute Staff, representative of an Institute member, or Institute committee member will knowingly or willfully further any questionable activity under the umbrella of the Institute.

Representatives of members of the Institute and committee members should know enough about antitrust laws to be able to avoid doing or discussing things in their work for or with the Institute that might raise questions. Representatives of Institute members, whether they be voting or non-voting, are urged to avoid not only actual violations of the law, but also any appearance of violation that might invite suspicion or investigation on the part of the enforcement authorities. A reasonable amount of common sense and good judgment must be used by those who serve the Institute, so that no risk will be



created of violations of law. To protect the Institute, its members and non-members who participate in Institute activities, the Institute has adopted and observes several basic policies:

- The Institute has well-defined, constructive objectives and activities as set forth in its Constitution and By-Laws. Institute programs and activities are designed to promote the overall interests of the industry and the public.
- Any activities concerned with pricing or unlawful marketing practices are scrupulously avoided.
- The Institute maintains various procedural safeguards relating to its programs for promulgation of standards, its dissemination of industry statistics and the operations of all Sections and committees, among others.
- The Institute retains a General Counsel to assist the Institute staff to ensure full observance of all Institute policies and to provide guidance and protective advice as to all Institute operations from an antitrust standpoint.

Antitrust Laws in General:

Antitrust laws are not intended to inhibit legitimate business activity. Their objective is to help preserve a free economy by encouraging competition in the marketplace. They outlaw artificial restraints on competition. The laws are maintained because certain unlawful business practices can threaten to distort the marketplace. Most experts believe that if these laws should fail to do their main job, they might be replaced by a much more inflexible system of government regulation and controls over business. Antitrust suits fall into several categories:

- Those aimed at prohibiting conspiracies, such as those to fix prices, that are subject to criminal actions. They prohibit contracts, combinations or conspiracies in restraint of trade or commerce. They include agreements of all kinds, whether written or oral, formal or informal, which restrain competition. Some of these restraints are deemed unreasonable per se, including those which have the purpose or effect of fixing prices, limiting production, allocating markets, or boycotting third parties.
- 2. Those aimed at prohibiting "monopolization" of any part of trade or commerce. Their main thrust is to prevent a single company from acquiring or holding sufficient power to control prices or to foreclose access to the market.
- 3. Those aimed at prohibiting "unfair methods of competition" and "unfair or deceptive acts or practices" in commerce. This includes various forms of "unfair" business conduct such as false advertising.
- 4. Specific forms of business restraints such as exclusive dealing and "tie-in" sales, acquisitions and mergers and interlocking directorships.
- 5. Those aimed at prohibiting discriminations in prices or services which have anticompetitive effects.

Activities to be Avoided:



To avoid possible problems, the following "don'ts" should be kept in mind by all Institute Staff, representatives of Institute members, and committee members when meeting for Institute activities:

DON'T agree with your competitors or anyone else:

- a. to fix the prices of products or their conditions of sale;
- b. to limit your production, fix production quotas, or otherwise limit the supply of any product reaching the market;
- c. to divide up any market, either geographically or by class of customer; or
- d. to blacklist or boycott customers, competitors or suppliers.

DON'T discuss or exchange information with your competitors on any subject relating to the "per se" restraints mentioned above. For example, don't have formal or informal discussions on the following:

- a. individual company prices, price changes, terms of sales, etc.;
- b. industry pricing policies, price levels, price changes, etc.;
- c. price differentials, price mark-ups, discounts, allowances, credit terms;
- d. costs of production or distribution, cost accounting formulas, methods of computing costs;
- e. individual company figures on costs, production, inventories, sales, etc.;
- f. information as to future plans of individual companies concerning the design, production, distribution or marketing of particular products including proposed territories or customers; or
- g. matters relating to individual suppliers or customers, particularly in respect to any action that might have the effect of excluding them from a market.

DON'T meet in "rump" sessions to discuss matters relating to any of the above. If such a discussion starts, leave the room and ask that it be noted in the minutes of the meeting that you objected to the discussion and left the meeting for that reason.

The above comments are intended as guidelines and not as rules. Every individual must use his or her own judgment in activities relating to the Institute. If ever there is doubt in your mind regarding the legality of an activity or discussion — if there is a question in your mind that you might be violating the antitrust laws — discuss the matter with your corporate legal counsel or with the Institute's staff and legal counsel before proceeding.

Exhibit 4: Hydraulic Institute Export Control and Sanction Laws

HI encourages all participants in its meetings to be aware of U.S. export control and sanctions laws relating to transfers of know how. Certain information related to developing, producing, and even using certain types of pumps and associated equipment is controlled for export from the United States. That information may also require an export license before it is shared with certain non-U.S. persons within the United States. Before discussing export-controlled information, each person is individually responsible for ensuring that the audience is authorized to hear that information.



The above comments are intended as guidelines and not as rules. Every individual must use his or her own judgment in activities relating to the Institute. If ever there is doubt in your mind regarding the legality of an activity or discussion — if there is a question in your mind that you might be violating the antitrust laws — discuss the matter with your corporate legal counsel or with the Institute's staff and legal counsel before proceeding.

Exhibit 5: Example of a Committee Meeting Agenda

AGENDA Hydraulic Institute ANSI/HI 14.5.2 Guideline for Fundamentals of Installation and Start-up of General Purpose Rotodynamic Pumps Wednesday, June 22, 2022 3:45 p.m. – 5:30 p.m.				
1. Welcome / Roll Call / Roster	P. Ruzicka/ HI Staff			
2. Call for Members	HI Staff			
3. Review / Approve Minutes of March 2022	All Attendees			
4. Review / Update Purpose, Scope, and Deliverables	C. Zentic			
5. Review of Anti-Trust Statement	HI Staff			
6. Review the definition of "General Purpose Pumps"	C. Zentic			
 7. Workgroup Breakout	All Attendees			
3. Review of Workgroup Breakout	All Attendees			
9. New Business	All Attendees			
10. Meeting Critique	All Attendees			
 Next Meeting: October 24-27, 2022 – Savannah, GA a. Identify Agenda Topics b. Identify Action Items: Who, What, When c. Meeting Time Required d. Schedule of Interim Teleconferences 	HI Staff			
12. Adjournment	C. Zentic/ HI Staff			

HYDRAULIC INSTITUTE

Exhibit 6: Hydraulic Institute Minutes and Action Items Policy

It is the intent of the HI Board of Directors and HI staff that minutes of HI meetings be issued promptly following each meeting. Minutes shall be distributed within four weeks following the conclusion of an event (Annual, Spring, or Fall meeting or teleconference).

It is recognized that HI staff members have multiple committee responsibilities and, additionally, have action items or assignments made during meeting that often require attention and immediate action following meetings. It is further recognized that during some HI meetings that as many as 25 different committees meet and the associated work burden – with other HI staff responsibilities – is extensive.

Therefore, to ensure that this policy will work, HI committees shall not impose upon staff nor shall staff agree to assume assignments that require action within two weeks following a meeting. In this manner HI staff will work, immediately following meetings, to draft, seek approval from Chairs and HI legal counsel and issue minutes in a timely manner. Committees using the HI-web-based collaboration tool, however, will be able to post documents for volunteer member action or comment during this period – as minimal staff intervention is required.

Minutes and associated action items shall be issued by HI staff to Chairs for approval within two weeks following any HI meeting by HI staff and distributed no later than four weeks following a meeting/event upon approval by Chairs and legal counsel.

HI committee chairs and legal counsel shall have two weeks to approve minutes following receipt. Draft minutes shall be issued to chairs and HI legal counsel contemporaneously. If no response is received by HI staff after one week reminder notices will be issued. If staff receives revisions of substance (beyond editorial) from the chair, then minutes shall be re-issued to HI legal counsel for re-consideration. Minutes, however, seldom require more than editorial revisions during the approval process.

If approval is not received from a committee chair or legal counsel within two weeks, staff is authorized to issue minutes. Minutes are always reviewed and approved by a committee at a subsequent meeting, allowing for any revisions required.

Volunteers Sought: In order to assist HI staff in recording minutes, and issuing them promptly following a meeting, it is suggested that the Vice Chairman of each committee assume a role of also taking notes, recording action items and issuing these to the responsible staff member either at the conclusion of the meeting in electronic form or no later than one week following the meeting. This practice (drafting committee) works well in ISO committees and Work Groups. An appropriate role and responsibility for Vice Chairs would be for follow-up with committee members and staff on accomplishment of their action items.

Minutes will continue to be issued in electronic form via e-mail, or for those committees using the HI web-based collaboration tool, will be posted to the appropriate committee section of this site for electronic distribution and/or access.



Approved by HI Board of Directors: October 24, 2004

Exhibit 7: Example Language for Committee Ballot Email

Subject: HI: IoT Committee Ballot Launch 9.15. Due 10.14

To: HI IoT Guidebook Voting Committee Members **Subject:** Committee Ballot of Internet of Things Solutions for Pumping Systems

Summary: The committee has developed a guidebook to engage, educate and establish an ECO system for all the stakeholders in the pumping industry that are on the roadmap of digitization while providing clarity to the world of IoT/IIoT/IoE. This is a new publication.

Instructions: This ballot is for formally voting on whether or not you concur with the proposed draft of the subject guidebook. Please indicate your vote by clicking the checkbox next to one of the voting options shown below. If you have comments, please follow the attached commenting instructions and attach the file in your reply. You must provide reasons for a negative vote. Please return your ballot by replying to this email as soon as possible, but no later than **October 14, 2022** to the attention of Amy Sisto at <u>HITechnical@pumps.org</u>. The committee roster is attached to this email. Ballot responses are requested from the Chair, Vice-Chair and Members. Alternate members and others listed are welcome to provide comment along with their Member representative or separately, but cannot vote on this ballot. However, if a Member does not vote, then the Alternate Member can vote on the Member's behalf and their vote will count towards the approval of the draft standard.

Question: Do you approve of the proposed revisions to HI IoT Guidebook as shown in the proposed draft? Select one of the following options:

Affirmative
 Affirmative w/ Comment(s)
 Negative w/ Reason(s)
 Abstain

Thank you for participating in this committee ballot. Please let me know if you have any questions.



Exhibit 8: Hydraulic Institute Policy on Plagiarism

The Hydraulic Institute defines plagiarism as the use of published processes, results, or words without explicitly acknowledging the original author and source. The act of plagiarizing means to present as new and original an idea or product derived from an existing source.

It is essential for all HI members and Standard Partners to recognize that plagiarism in any form, at any level, is unacceptable and is considered a serious breach of professional conduct, with potentially severe ethical and legal consequences.

To avoid this issue all HI members and Standard Partners, when completing assignments and action items, should retain a list of all reference materials they use to complete the assignment. All verbatim text will need to be cited appropriately and advanced notification and permission might be required.

Any suspected acts of plagiarism should be immediately brought to the attention of HI's Director, Technical Affairs.

Exhibit 9: Tables 14.2.a – Principal symbols and 14.2.b Subscripts from 2019 Publication

Symbol	Term	Metric unit	Abbr.	US customary unit	Abbr.	Conversion factor ^a
A	Area	square millimeter	mm ²	square inch	in ²	645.2
BEP	Best efficiency point	Cubic meter/hour	m3/h	US gallon/minute	gpm	0.2271
Ср	Specific head	kilojoules/kilogram Kelvin	k <mark>J</mark> /kg-K	British thermal unit/pound mass degree Fahrenheit	BTU/lbm °F	4.187
D	Diameter	millimeter	mm	inch	in	25.4
E	Energy	Joules	J	foot-pound force	ft-lbf	1.3558
е	Overall uncertainty	percent	%	percent	%	-
F	Force	newton	N	pound force	lbf	4.448
f	Frequency	cycle/second	Hz	cycle/second	Hz	1
g	Gravitational acceleration	meter/second squared	m/s ²	foot/second squared	ft/s²	0.3048
H	Total head	meter	m	foot	ft	0.3048
h	Head	meter	m	foot	ft	0.3048
I	Area moment of inertia	millimeter to the fourth	mm ⁴	inches to the fourth	in ⁴	416,200

Table 14.2a – Principal symbols



Symbol	Term	Metric unit	Abbr.	US customary unit	Abbr.	Conversion factor ^a
WR ²	Mass moment of inertia	newton-meter squared	N-m ²	pound force-feet squared	lbf-ft ²	47.88
К	Thrust factor	dimensionless	-	dimensionless	*	1
K,	Thrust factor	kilogram/meter	kg/m	pound mass/foot	lbm/ft	1.488
K⁵	Type number	dimensionless	-	dimensionless	4	1
1	Static lift	meter	m	foot	ft	0.3048
MAWP	Maximum allowable working pressure	kilopascal	kPa	pound force/square inch	psi	6.895
n	Rotative speed	revolution/minute	rpm	revolution/minute	rpm	1
NPSH	Net positive suction head	meter	m	foot	ft	0.3048
NPSHA	Net positive suction head available	meter	m	foot	ft	0.3048
NSPHR	Net positive suction head required	meter	m	foot	ft	0.3048
NPSH3	Net positive suction head required for a 3% head reduction at first stage	meter	m	foot	ft	0.3048
ns (Ns)	Specific speed	index number	2	index number	2	0.0194
р	Pressure	kilopascal	kPa	pound force/square inch	psi	6.895
P	Power	kilowatt	kW	horsepower	hp	0.7457
Q ^c	Volume rate of flow	cubic meter/ second	m3/s	US gallon/minute	gpm	0.0000631
		cubic meter/hour	m3/h	US gallon/minute	gpm	0.2271
Q'	Volume rate of flow per eye	cubic meter/ second	m3/s	US gallon/minute	gpm	0.0000631
q	Mass rate of flow	kilograms/second	kg/s	pound mass/ second	Ibm/s	0.4536
RM	Linear model ratio	dimensionless	-	dimensionless	2	1
S (Nss)	Suction specific speed	index number	ō	index number	ō	0.0194
s	Specific gravity	dimensionless	-	dimensionless	5	1
T⁵	Torque	newton-meter	N-m	pound-foot	Ibf-ft	1.356
t	Temperature	degree Celsius	°C	degree Fahrenheit	°F	(°F-32)*5/9
t ^o	Time	second	S	second	s	1
U	Residual unbalance	gram-millimeter	g-mm	ounce-inch	oz-in	720
Up	Mean velocity	meter/second	m/s	foot/second	ft/s	0.3048
v	Velocity	meter/second	m/s	foot/second	ft/s	0.3048
Vo	Local velocity	meter/second	m/s	foot/second	ft/s	0.3048
х	Exponent	none	none	none	none	1

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Symbol	Term	Metric unit	Abbr.	US customary unit	Abbr.	Conversion factor ^a
у	Specific energy	joule/kilogram	J/kg	British thermal unit/ pound mass	Btu/Ibm	2326
Z	Elevation gauge distance above or below datum	meter	m	foot	ft	0.3048
Z ^o	Height above reference plane	meter	m	foot	ft	0.3048
∆ (delta)	Difference	dimensionless	-	dimensionless	-	-
δ (delta)	Deflection	millimeter	mm	inch	In	25.4
Φ (phi)	Angle	Degree	0	Degree	0	1
0 ^b (theta)	Temperature	degree Celsius	°C	degree Fahrenheit	°F	(°F-32)*5/9
η(eta)	Efficiency	percent	%	percent	%	-
v (nu)	Kinematic viscosity	millimeter squared/ second	mm2/s	foot squared/ second	ft2/s	92,900
λ ^ь (lambda)	Pipe friction loss coefficient	dimensionless	-	dimensionless	-	1
π (pi)	pi = 3.1416	dimensionless		dimensionless	-	1
p (rho)	Density	kilogram/cubic meter	kg/m3	pound mass/cubic foot	lbm/ft3	16.02
τ (tau)	Torque	newton-meter	N-m	pound force-foot	Ibf-ft	1.356
ω (omega)	Angular velocity	radians/second	rad/s		-	1

^a Multiply US customary unit by Conversion factor to obtain Metric unit (except for temperature) ^b Unique to ANSI/HI 14.6

° Cubic meters/second used for calculating specific speed. Cubic meters/hour common unit for specifying rate of flow.

Table 14.2b - Subscripts

Subscript	Term
1	Test condition or model
1ª	Inlet
1 ^{'a}	Inlet measuring section
2	Specific condition or prototype
2ª	Outlet
2'a	Outlet measuring section
a	Absolute
abs	Absolute
Α	Axial
all	Allowable
amb	Ambient
atm	Atmospheric
b	Barometric
ba	Bowl assembly



Subscript	Term
C	casing
d	Discharge
drv	Driver
f	Friction
G	Guaranteed point
g	Gauge
gr	Combined motor/pump (overall)
im	intermediate mechanism
l	head loss
max	Maximum
min	Minimum
mot	Motor
N	Normal
OA	Overall unit
ор	Operating pressure
opt	Optimum
ot	Operating temperature
p	Pump
r	Rated
R	Radial
s	Suction
SO	Shut off
spa	Specified
stat	Static
Ta	Translated
t	Theoretical
t,x	Total, at observed point
v	Velocity
Va	Vapor pressure
vp	Vapor pressure
w	Water

Unique to ANSI/HI 14.6.



Exhibit 10: Foreword Boilerplate Example – HI Publications Only

It is the responsibility of HI Staff to select and edit the appropriate foreword for the publication.

Foreword

Purpose and aims of the Hydraulic Institute

The purpose and aims of the Hydraulic Institute are to drive all Pump System stakeholders towards a sustainable future by:

- a) Advancing Solutions for Pump System Performance and Efficiency
- b) Developing Standards and Technical Resources
- c) Educating the Global Marketplace
- d) Advocating for the Industry

Purpose of Document:

Hydraulic Institute Standards, Guidelines, Specifications, Program Guidelines, and Papers are adopted in the public interest and are designed to help eliminate misunderstandings between the manufacturer, the purchaser, and/or the user and to assist the purchaser in selecting and obtaining the proper product for a particular need. Use is completely voluntary and does not in any respect preclude a member from manufacturing or selling products which are not conforming.

Definition of Documents:

Hydraulic Institute Standard

Quoting from Article XV, Standards, of the By-Laws of the Institute, Section B:

"An Institute Standard defines the product, material, process or procedure with reference to one or more of the following: nomenclature, composition, construction, dimensions, tolerances, safety, operating characteristics, performance, quality, rating, testing and service for which designed."

Hydraulic Institute Guideline

A Hydraulic Institute Guideline is not normative. The guideline is tutorial in nature, to help the reader better understand the subject matter.

Hydraulic Institute Program Guideline

A Hydraulic Institute Program Guideline outlines a normative process that must be followed to participate in the Program.

Hydraulic Institute Specification

A Hydraulic Institute Specification precisely and clearly states requirements that are suitable for incorporating into contract terms. In addition to the stated requirements, it may state options, and provide external references, notes to the specifier, datasheets, or other useful content. All content that is optional or is not a stated requirement shall not conflict with the stated requirements.

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Hydraulic Institute White Paper

A Hydraulic Institute White Paper defines a product, material, process or procedure with reference to one or more of the following: nomenclature, composition, construction, tolerances, operating characteristics, applications, performance, quality, rating, acceptability criteria, testing and service for which designed.

Hydraulic Institute Body of Knowledge

A Hydraulic Institute Body of Knowledge, defines training or knowledge requirements for the pump industry, which can be used by entities interested in developing training or certification for industry professionals.

Comments from Users

Comments from users of this standard will be appreciated, to help the Hydraulic Institute prepare even more useful future editions. Questions arising from the content of this standard may be directed to the Technical Director of the Hydraulic Institute. If appropriate, the inquiry will then be directed to the appropriate technical committee for provision of a suitable answer.

Revisions

Hydraulic Institute publications are subject to constant review, and revisions are undertaken whenever it is found necessary because of new developments and progress in the art. Errata or addenda may be issued to address limited changes.

Disclaimer

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This document does not contain a complete statement of all requirements, analyses, and procedures necessary to ensure safe or appropriate selection, installation, testing, inspection, and operation of any pump or associated products. Each application, service, and selection is unique with process requirements that shall be determined by the owner, operator, or its designated representative.

Units of measurement

Metric units of measurement are used, and corresponding US customary units appear in parentheses. Charts, graphs, and sample calculations are also shown in both metric and US customary units. Because values given in metric units are not exact equivalents to values given in US customary units, it is important that the selected units of measure to be applied be stated in reference to this standard. If no such statement is provided, metric units shall govern.

Committee list

A working committee met many times to facilitate its development. At the time it was developed, the committee had the following members:



Chair – XXX	
Vice-chair – XXX	
Committee Member	Company
XXXXXXXXX	XXXXXXX

Special acknowledgements – peer review

Several independent experts in the industry provided their time to review and evaluate the committee draft. They conducted a thorough review of the material, ensuring the document met the intended goal established by the committee chairs, and provided accurate, coordinated, and relevant information to the reader. Their work was extremely valuable, and the committee thanks all of them for their time and efforts.

Peer Reviewer	Company
xxxxxxxx	XXXXXXX



Exhibit 11: Publication Data Pages

Highlighted portions indicate text which is to be updated to the specific document. It is the responsibility of HI Staff to select and update the appropriate publication data page for the document being published.

Boilerplate For ANSI/HI Standard





Boilerplate For HI Standard

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	The use of Hydraulic Institute Standard is completely voluntary, their existence does not in any respect preclude anyone, whether he has approved the guidelines or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard.
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Boilerplate For HI Program Guideline

HI <mark>X.X-20XX</mark>	Hydraulic Institute program Guideline Approval of a Hydraulic Institute Program Guideline requires verification by the Hydraulic met by the committee responsible for authoring the Hydraulic Institute Program Guideline Approval is established when, in the judgement of the Hydraulic Institute Program Guideline Approval is established when, in the judgement of the Hydraulic Institute Program Committee, substantial agreement has been reached by the authoring committee, HI Standards Voting Representatives, and by peer reviewers, where applicable. Substantial agreement signifies that nuch more than a simple majority was achieved, but does not necessarily indicate unanimity. Approval requires that all views and objections be considered, and that a concerted effort be made toward their resolution. The use of Hydraulic Institute Program Guideline is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the guidelines or not, from manufacturing, markaning, or using products, processes, or procedures not conforming to the program Guideline.
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Boilerplate For HI White Paper





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Boilerplate For HI Body of Knowledge

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	Publication Data
Title Body of Knowledge	Pump Industry Fundamentals Body of Knowledge – 1st edition
	Includes bibliographical references and index.
for title	ISBN 978-1-954671-14-0
	It is not possible, nor is it the intent of this guideline, to cover all information and experience required for an individual to be able to conduct a pump system assessment. Therefore, this guideline does not contain a complete description of all information required to conduct a pump system assessment, but covers knowledge areas that should be mastered by an individual through research and industry experience that are required to conduct pump system assessments.
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Boilerplate For HI Guidebook



Exhibit 12: Guiding Principles – Selection of Committee Leadership

Selection of Committee Chair

Nominees for committee chair are solicited by the Standards Committee when an opening arises, or during the New Work Item Proposal (NWIP) process. The Standards Committee is responsible for approving the committee chair. In selecting a committee chair, the Standards Committee will adhere to the following guidance.

1. General Guidance for committee chair selection:

- a. The Standards Committee shall make the selection based on the expertise of the nominee(s), their past participation, and future availability
- b. The Standards Committee shall not consider, age, race, gender, or any other protected group status in the selection of the committee chair

2. Committee specific guidance for committee chair selection:

a. A representative from an HI member company engaged in pump manufacturing is preferred for chair positions on committees producing documents related to pump



design, pump testing, and pump performance. No such preference applies to chair positions on committees producing documents not related to pump design, pump testing and pump performance, nor to vice-chair positions on any committees.

Listing of committees which guidance applies:

Positive Displacement Pump Group

- 3.1-3.5 Rotary pumps
- 3.6 Rotary Pump Test
- 4.1–4.6 Magnetic Driven Rotary Pumps
- 6.1–6.5 Reciprocating Power Pumps
- 6.6 Reciprocating Pump Tests
- 8.1 8.5 Direct Acting (Steam) Pumps
- 7.1-7.5 Controlled Volume Metering Pumps
- 7.6 Controlled Volume Metering Pump Tests
- 10.1-10.5 Air Operated Pumps
- 10.6 Air Operated Pump Test

Rotodynamic Pump Group

- 14.3 Design & Application
- OH1 Specification
- 9.6.1 NPSH Margin
- 9.6.2 Assessment of applied nozzle loads
- 9.6.3 Operating Regions
- 9.6.4 Vibration
- 20.3 Pump Efficiency Prediction
- 14.6 Acceptance Tests
- 40.6 DOE Test
- 14.7 Field Test
- 5.1-5.6 Sealless Pumps
- 12.1-12.6 Slurry Pumps
- Fire Pump

Selection of Committee Vice-Chair

The Committee Chair is responsible for selecting the Committee Vice-Chair adhering to the following guidance.

Guidance for committee vice-chair selection:

a. It is customary for the Chair to advise the committee of the opening, and the current nominee(s), and see if there are others that are also interested to be considered for the role prior to selecting the new vice-chair.



- b. The chair shall make the selection based on the expertise of the nominee(s), their past participation, and future availability
- c. The chair shall not consider, age, race, gender, or any other protected group status in the selection the selection of the vice-chair
- d. The new vice-chair should not be filled by someone form the same member/partner company or parent company affiliation as the chair

Exhibit 13: Policy for Remote Participation at an HI Meeting

The Hydraulic Institute provides members with a variety of opportunities to participate with their industry colleagues in meetings hosted by the Institute throughout the year. These meetings offer members unique opportunities for networking, education and participation in the development of pump industry standards. HI meetings are intended and designed for in-person participation and, in general, requests to participate remotely cannot be honored.

On occasion, requests for exceptions to this policy will be considered on a case-by-case basis and are limited to: medical conditions, adverse weather prohibiting travel, and other extenuating circumstances restricting travel to a meeting. Requests will only be considered for the respective Committee Chair, Vice-Chair, Co-Chair or Subcommittee Leaders who have a history of regular onsite participation. Requests will be denied if an alternate Committee Leader will be in attendance to administer the onsite meeting. Other committee members will be considered if an additional member is needed to constitute a quorum.

Overall remote participation is contingent on the technological capabilities while on site.

Requests shall be submitted in writing and reviewed by HI staff. A response will be provided within five (5) business days. If a request meets the requirements stated here in, HI will provide the necessary technology to establish remote access provided it is available at the event venue (i.e. WebEx, conference/speaker phone, phone line, etc.). It is the responsibility of the approved remote participant to ensure availability of required software and technology needed to connect.