

Meeting Minutes: Board of High-Pressure Piping Systems

Date: July 14, 2022

Time: 10:00 a.m.

Minutes by: Lyndy Logan

Location: Minnesota Room, DLI, 443 Lafayette Rd. No., St. Paul, MN 55155

Members Present

1. Aubrey Archer
2. Kyle Bain – Vice-Chair
3. Todd Green – CO’s Designee
4. Nirmal Jain – via phone
5. Matt Marquis – Secretary
6. Pat McCullough
7. Jake Pettit
8. Roger Thein – via phone
9. Mark Worms – Chair

DLI Staff & Visitors

Jeff Lebowski (Board Counsel, DLI)
Brittany Wysokinski (Board Counsel, DLI)
Lyndy Logan (DLI)
Pat McCullough – City of St. Paul
Gary Thaden – MMCA
Laurent Wickland (former Board member) – phone

Members Absent

Mark Kincaid
Steve Plieseis

1. Call to Order

- A. Roll Call – the meeting was called to order at 10:04 a.m. by Chair Worms and roll call was completed by Secretary Marquis – a quorum was met with 9 of 11 voting members present electronically.
- B. Announcements/Introductions
 - All handouts discussed and meeting information are posted on the Board’s website at: <https://www.dli.mn.gov/about-department/boards-and-councils/board-high-pressure-piping-systems>
 - Everyone present in person and via telephone can hear all discussions.
 - All votes will be taken by roll call if any member is attending by phone.

2. Approval of Meeting Agenda

A motion was made by Marquis, seconded by Pettit, to approve the agenda as presented. The roll call vote was unanimous with 9 votes in favor; the motion carried.

3. Approval of Previous Meeting Minutes

A motion was made by McCullough, seconded by Pettit, to approve the April 14, 2022, regular Board meeting minutes as presented. The roll call vote was unanimous with 9 votes in favor; the motion carried.

4. Approval of Expense Reports

Lyndy will submit expense reports to Financial Services for payment.

5. Regular Business

- A. Licensing and permitting
Green summarized **Attachment A**.

6. Special Business

A. Officer nominations and elections

Election of Officers (Meeting was turned over to Green, Commissioner's Designee)

1. **Chair**

Matt Marquis nominated Mark Worms for Chair. The roll call vote was unanimous with 9 votes in favor; the motion carried.

2. **Vice-Chair**

Pat McCullough nominated Kyle Bain for Vice-Chair. The roll call vote was unanimous with 9 votes in favor; the motion carried.

3. **Secretary**

Jake Pettit nominated Matthew Marquis for Secretary. The roll call vote was unanimous with 9 votes in favor; the motion carried.

Meeting was turned over to re-elected Chair Worms.

B. Code Adoption Update

1. Review Revisor's draft – see **Attachment B**

- There are two minor edits – the Revisor changed the word “through” to “to” and the Board had no issues with these changes.

A motion was made by Bain, seconded by Marquis, to accept the Revisor's Draft dated April 26, 2022. The roll call vote was unanimous with 9 votes in favor; the motion carried.

2. Review draft SONAR – see **Attachment C**

Revisions to 5230.5920 Qualification of Welding Procedures, Welders, and Welding Operators as follows:

- **Subpart 1. Scope.** The proposed rule removes the **word work** “Unfired” from the title of the Power Boiler and Pressure Vessel sections of the ASME Boiler and Pressure Vessel Code. An earlier edition of the ASME Boiler and Pressure Vessel Code **was** called Section VIII **Power Boiler and** Unfired Pressure Vessel. The word “Unfired” has since been removed from the title of Section VIII. Therefore, the proposed rule removes the word so that the rule is consistent with the underlying standard.

Wysokinski said she would like to send to MMB and the Governor's office by the end of July or beginning of August. Visitors in person and via phone were asked if they had any comments; there were none.

3. **Vote on Resolution – see Attachment D**
A motion was made by Marquis, seconded by McCullough, to approve the Resolution for the Chair’s signature. The roll call vote was unanimous with 9 votes in favor; the motion carried.

7. Complaints

Nothing brought forth

8. Open Forum

No discussion

9. Board Discussion

No discussion

10. Announcements

Next regularly scheduled meetings – 10:00 a.m., Thursday – DLI / Remote call-in option

- October 13, 2022

11. Adjournment

A motion made by Marquis, seconded by Bain, to adjourn the meeting at 10:45 a.m. The roll call vote was unanimous with 9 votes in favor; the motion carried.

Respectfully Submitted,

Matthew Marquis

Matthew Marquis

Secretary

Green meeting practices

The State of Minnesota is committed to minimizing in-person environmental impacts by following green meeting practices. DLI is minimizing the environmental impact of its events by following green meeting practices. DLI encourages you to use electronic copies of handouts or to print them on 100% post-consumer processed chlorine-free paper, double-sided.

Exams

- HPP Examination statistics FY18 – FY22

HPP

EXAM	2018	2019	2020	2021	2022	5 Year Avg.
Journey	74% (121/163)	67% (132/196)	71% (117/164)	70% (154/221)	77% (119/155)	72% (643/899)
Master	57% (13/23)	48% (10/21)	44% (8/18)	51% (20/39)	41% (7/17)	49% (58/118)

Active Licenses & Registrations

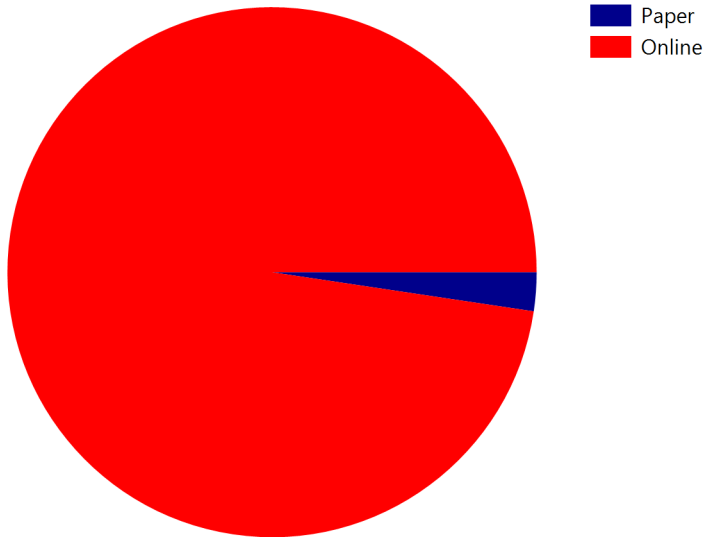
- High Pressure Piping Contractors: 104
- High Pressure Piping Master Pipefitters: 268
- High Pressure Piping Journeyworkers: 1,841
- Registered Unlicensed Pipefitters: 601

Enforcement

- There was one HPP enforcement action in FY22
 - An unlicensed Nebraska contractor was ordered to cease and desist from engaging in unlicensed high pressure piping work and fined \$8,000. The unlicensed work is now being reviewed, replaced, and all additional HPP work is being completed by a contractor holding a Minnesota high pressure piping contractor license.

Online Applications for High Pressure Piping Permit For Period 07/01/2020 to 06/30/2021

Online Application Percentage



Online Use	
Online	414
Paper	10
Total	424

Online	414
Paper	10
Total	424

Permits Applied	
Subtype	Count
Blanket	86
Standard	237
Survey	2
Time & Materials	99
Total For All Sub Types	424

Subtype	Count
Blanket	86
Standard	237
Survey	2
Time & Materials	99
Total For All Sub Types	424

Current Permit Status	
Status	Count
Finaled	420
Issued	4
Total For All Sub Types	424

Status	Count
Finaled	420
Issued	4
Total For All Sub Types	424

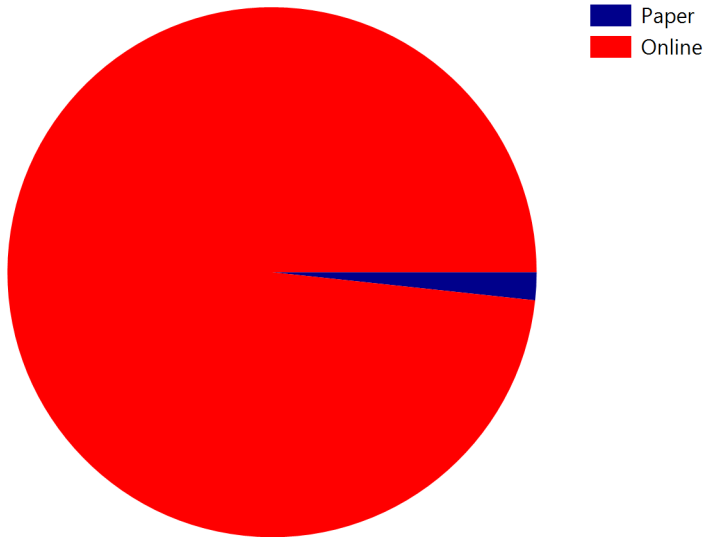
Type of System	
System	Count
Ammonia	168
Steam	208
Other	3
Not Specified	45
Total For All System Types	424

System	Count
Ammonia	168
Steam	208
Other	3
Not Specified	45
Total For All System Types	424

Total HPP Permit Revenue received during FY21: \$971,507

Online Applications for High Pressure Piping Permit
For Period 07/01/2021 to 06/30/2022

Online Application Percentage



Online Use

Online	406
Paper	7
Total	413

Permits Applied

Subtype	Count
Blanket	96
Standard	208
Survey	2
Time & Materials	107
Total For All Sub Types	413

Current Permit Status

Status	Count
Finalized	255
Issued	155
Hold	2
Closed	1
Total For All Sub Types	413

Type of System

System	Count
Ammonia	143
Steam	207
Other	8
Not Specified	55
Total For All System Types	413

Total HPP Permit Revenue received during FY22: \$968,331

1.1 **Department of Labor and Industry**

1.2 **Proposed Permanent Rules Regulating the Board of High Pressure Piping**

1.3 **5230.0220 BIOPROCESS PIPING.**

1.4 Subpart 1. **ASME BPE.** All bioprocess piping must meet the requirements of ASME
1.5 BPE. For purposes of this chapter, "ASME BPE" means the ~~2016~~ 2019 edition of the
1.6 Bioprocessing Equipment Standard adopted and published by ASME, Two Park Avenue,
1.7 New York, New York 10016. ASME BPE is incorporated by reference and made part of
1.8 the code for high pressure piping systems. ASME BPE is not subject to frequent change
1.9 and a copy of ASME BPE is available in the office of the commissioner of labor and industry
1.10 and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota
1.11 55155.

1.12 Subp. 2. **Examination of welded pipe joints.** All welds on bioprocess piping systems
1.13 must comply with the visual examination acceptance standards in sections MJ-8.3 to MJ-8.4
1.14 of ASME BPE. When nondestructive examination other than visual examination is required
1.15 by job specification or by the administrative authority, the welds must comply with the
1.16 acceptance standards in sections MJ-8.3 to MJ-8.4 of ASME BPE for each type of
1.17 nondestructive examination required. All costs of nondestructive testing shall be paid by
1.18 the installing contractor. The contractor shall provide a copy of all examination results to
1.19 the administrative authority upon request.

1.20 **5230.0260 SCOPE.**

1.21 Valves, fittings, and piping for boilers, as prescribed in the ASME Code for Power
1.22 Boilers, are within the scope for this code but provisions of the ASME Code for Power
1.23 Boilers shall govern where they exceed corresponding requirements of this code. For purposes
1.24 of this chapter, "ASME Code for Power Boilers" means the ~~2017~~ 2021 edition of the ASME
1.25 Boiler and Pressure Vessel Code, section I, as adopted and published by ASME, Two Park
1.26 Avenue, New York, New York 10016. The ASME Code for Power Boilers is incorporated

2.1 by reference in the code for steam or heating media piping systems. The ASME Code for
2.2 Power Boilers is not subject to frequent change and a copy is available in the office of the
2.3 commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin Luther
2.4 King Jr. Blvd., Saint Paul, Minnesota 55155.

2.5 Economizers, heaters, tanks, and other pressure vessels are outside the scope of this
2.6 code, but connecting piping shall conform to the requirements herein specified.

2.7 **5230.0265 ADOPTION OF ASME B31.1 BY REFERENCE.**

2.8 For purposes of this chapter, "ASME B31.1" means the ~~2016~~ 2020 edition of the
2.9 standard for power piping, as approved and published by ASME, Two Park Avenue, New
2.10 York, New York 10016. ASME B31.1 is incorporated by reference and made part of the
2.11 code for steam or heating media piping systems, except as amended in this chapter. Portions
2.12 of this chapter reproduce text from ASME B31.1. ASME B31.1 is not subject to frequent
2.13 change and a copy of ASME B31.1 is available in the office of the commissioner of labor
2.14 and industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint
2.15 Paul, Minnesota 55155. ASME B31.1 is copyright by ASME. All rights reserved.

2.16 **5230.0275 CHAPTER I, SCOPE AND DEFINITIONS.**

2.17 Subpart 1. **Section 100.1.2.** ~~The first paragraph of part (A)~~ Subparagraph (a) of ASME
2.18 B31.1, section 100.1.2 is amended to read as follows:

2.19 ~~(A)~~ (a) This ~~code~~ Code covers boiler external piping as defined below for power boilers
2.20 and ~~high temperature, high pressure~~ high-temperature, high-pressure water boilers in which:
2.21 steam or vapor is generated at a pressure of more than 15 ~~p.s.i. gauge~~ psig [100 kPa (gage)];
2.22 and ~~high temperature~~ high-temperature water or other medium used for heating is generated
2.23 at pressures exceeding 30 ~~p.s.i. gauge~~ psig [207 kPa (gage)] and temperatures exceeding
2.24 250 degrees Fahrenheit (120 degrees Celsius).

3.1 Subp. 2. **Section 100.1.3.** Subparagraph ~~(F)~~ (f) of ASME B31.1, section 100.1.3, is
3.2 deleted.

3.3 **5230.0305 CHAPTER VI, INSPECTION, EXAMINATION, AND TESTING.**

3.4 **Section 136.** ASME B31.1, sections 136.1 to 136.3.2 are deleted.

3.5 **5230.0325 APPENDICES.**

3.6 Notwithstanding anything to the contrary in ASME B31.1, the following "Mandatory
3.7 Appendices" in ASME B31.1 are recommended rather than mandatory: A, D, G, H, and ~~J~~
3.8 P. The department shall not enforce compliance with "Mandatory Appendices" A, D, G, H,
3.9 or ~~J~~ P of ASME B31.1.

3.10 **5230.0335 EXAMINATION OF WELDED PIPE JOINTS.**

3.11 All welds on steam or heating media piping systems must comply with the visual
3.12 examination acceptance standards in section 136.4.2 of ASME B31.1. When nondestructive
3.13 examination other than visual examination is required by job specification or by the
3.14 administrative authority, the welds must comply with the acceptance standards in sections
3.15 136.4.3 to 136.4.6 of ASME B31.1 for each type of nondestructive examination required.
3.16 All costs of nondestructive testing shall be paid by the installing contractor. The contractor
3.17 shall provide a copy of all examination results to the administrative authority upon request.

3.18 **5230.5001 INCORPORATIONS BY REFERENCE.**

3.19 Subpart 1. **ANSI/IIAR 2.** For purposes of this chapter, "ANSI/IIAR 2" means the
3.20 ~~2014~~ 2021 revision of the standard for Safe Design of Closed-Circuit Ammonia Refrigeration
3.21 Systems, as approved by the American National Standards Institute and as published by the
3.22 International Institute of Ammonia Refrigeration, 1001 North Fairfax Street, Suite 503,
3.23 Alexandria, Virginia 22314. ANSI/IIAR 2 is incorporated by reference and made part of
3.24 the code for ammonia refrigeration systems, except as amended in this chapter. Portions of
3.25 this chapter reproduce text from ANSI/IIAR 2. ANSI/IIAR 2 is not subject to frequent

4.1 change and a copy of ANSI/IIAR 2 is available in the office of the commissioner of labor
4.2 and industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint
4.3 Paul, Minnesota 55155. ANSI/IIAR 2 is copyrighted by the International Institute of
4.4 Ammonia Refrigeration. All rights reserved.

4.5 Subp. 2. **ASME B31.5.** For purposes of this chapter, "ASME B31.5" means the ~~2016~~
4.6 2019 revision of the standard for Refrigeration Piping and Heat Transfer Components as
4.7 approved and published by ASME, Two Park Avenue, New York, New York 10016. ASME
4.8 B31.5 is incorporated by reference and made part of the code for ammonia refrigeration
4.9 piping. ASME B31.5 is not subject to frequent change and a copy of ASME B31.5 is
4.10 available in the office of the commissioner of labor and industry and at the State Law Library,
4.11 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

4.12 **5230.5005 CHAPTER 13, PIPING.**

4.13 Subpart 1. **Chapter 13.2.1.1.** ANSI/IIAR 2, chapter 13.2.1.1, is amended to read as
4.14 follows:

4.15 **13.2.1.1. Application of materials.**

4.16 a. Carbon steel liquid lines must utilize A106 seamless pipe or A333
4.17 seamless pipe.

4.18 b. Piping material used in the discharge line of a pressure relief
4.19 device, when discharging to atmosphere, Type F butt weld pipe is
4.20 allowed.

4.21 c. Mill test reports must be provided for the inspector at the
4.22 inspector's discretion to verify heat numbers on the pipe and to verify
4.23 compliance with this part.

4.24 Subp. 2. **Chapter 13.2.2.** ANSI/IIAR 2, chapter 13.2.2, is amended by adding a
4.25 subsection as follows:

5.1 **13.2.2.1.** Carbon steel, welded.

5.2 a. 1-1/2 inch and smaller - schedule 80.

5.3 b. 2 inch through 10 inch - schedule 40.

5.4 c. 12 inch and larger - standard weight.

5.5 Subp. 3. **Chapter 13.2.2.** ANSI/IIAR 2, chapter 13.2.2, is amended by adding a
5.6 subsection as follows:

5.7 **13.2.2.2.** Stainless steel, welded.

5.8 a. 3/4 inch through 6 inch - schedule 40.

5.9 b. 8 inch and larger - schedule 10.

5.10 Subp. 4. **Chapter 13.3.** ANSI/IIAR 2, chapter 13.3, is amended by adding a subsection
5.11 as follows:

5.12 ~~13.3.8~~ **13.3.2.9.** Operating speed of control valve actuators shall be considered
5.13 in the system design. Quarter turn valves (ball valves, butterfly valves, etc.)
5.14 must utilize an actuator that restricts the time from fully open to fully closed,
5.15 both directions, to at a minimum of 60 seconds.

5.16 **5230.5007 CHAPTER 15, OVERPRESSURE PROTECTION DEVICES.**

5.17 Subpart 1. **Chapter ~~15.2.5~~ 15.2.7.** ANSI/IIAR 2, chapter ~~15.2.5~~ 15.2.7, is amended
5.18 to read as follows:

5.19 ~~15.2.5~~ **15.2.7.** Relief valves shall not be located in refrigerated spaces unless
5.20 precautions are taken to prevent moisture migration into the valve body or relief
5.21 valve vent line. A drip pocket the size of the discharge pipe and at least 24 inches
5.22 in length must be installed below a vertical riser in the discharge pipe and must
5.23 be fitted with a drain plug or valve.

6.1 Subp. 2. **Chapter ~~15.2.6.2~~ 15.2.8.2**. ANSI/IIAR 2, chapter ~~15.2.6.2~~ 15.2.8.2, is
6.2 amended by adding the following paragraph at the end:

6.3 Rupture discs may only be used when installed in series with a pressure relief
6.4 valve.

6.5 Subp. 3. **Chapter ~~15.3.2~~ 15.3.3**. ANSI/IIAR 2, chapter ~~15.3.2~~ 15.3.3, is amended by
6.6 adding a subsection as follows:

6.7 **~~15.3.2.1~~ 15.3.3.1**. Where the refrigerant inlet and outlet of air-cooled or evaporative
6.8 condensers can be isolated, they shall be equipped with overpressure protection.

6.9 Subp. 4. **Chapter 15.4.3**. ANSI/IIAR 2, chapter 15.4.3, is amended to read as follows:

6.10 **15.4.3**. The discharge piping from pressure relieving devices to atmosphere
6.11 shall be a minimum schedule 40 steel for all pipe sizes.

6.12 **5230.5920 QUALIFICATION OF WELDING PROCEDURES, WELDERS, AND**
6.13 **WELDING OPERATORS.**

6.14 Subpart 1. **Scope**. This part applies to welding that is part of any high pressure piping
6.15 work, except where the welding is regulated by other codes or Minnesota state regulatory
6.16 bodies, such as the Power Boiler and ~~Unfired~~ Pressure Vessel sections of the ASME Boiler
6.17 and Pressure Vessel Code.

6.18 Subp. 2. **Incorporation by reference**. For purposes of this chapter, "ASME section
6.19 IX" means the ~~2017~~ 2021 edition of section IX of the Boiler and Pressure Vessel Code, as
6.20 approved and published by ASME, Two Park Avenue, New York, New York 10016. ASME
6.21 section IX is incorporated by reference and made a part of this chapter. ASME section IX
6.22 is not subject to frequent change. A copy of ASME section IX is available in the office of
6.23 the commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin
6.24 Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

7.1 Subp. 3. **Welding qualifications.** Standard qualifications for welding procedures,
7.2 welders, and welding operators made according to ASME section IX qualify for work under
7.3 this part.

7.4 Subp. 4. **Retest and renewal of welder qualification.** Welders and welding operators
7.5 must meet the standard requirements for initial welder qualification, welder continuity
7.6 requirements, and retest and renewal requirements, as set forth in ASME section IX.

7.7 Subp. 5. **Weld procedure and qualification requirements.** No welding may be
7.8 performed on high pressure piping systems without a welding procedure specification and
7.9 an associated procedure qualification record. Welding performed on high pressure piping
7.10 systems must be performed using only welders or welding operators properly qualified
7.11 ~~according to the welding procedure~~ in accordance with ASME section IX. All welding
7.12 procedures must meet the requirements of ASME section IX.

7.13 Subp. 6. ~~Evaluation standards~~ **Department evaluation.** The welding procedure
7.14 ~~specification and specifications,~~ procedure qualification ~~record~~ records, and welder or
7.15 welding operator performance qualification and associated continuity records must be
7.16 objectively evaluated by and acceptable to the administrative authority in accordance with
7.17 ASME section IX.

7.18 Subp. 7. **Documentation required.** Welding performed on high pressure piping
7.19 systems must be supported by the mandatory documents of the welding procedure
7.20 specification, ~~welding procedure qualification,~~ and procedure qualification record. These
7.21 documents, along with support for welder qualification, must be available at the work site
7.22 upon request.

7.23 Subp. 8. **Welder identification and log requirement.** A welder or welding operator
7.24 qualified for a project must be assigned an identification number, letter, or symbol unique
7.25 to that welder. Each weld must be stamped or marked with the welder's ~~identification symbol.~~
7.26 ~~A welding log must be maintained as set forth in ASME section IX.~~ unique identifier.

8.1 Alternatively, the contractor shall maintain records that identify welds made by the welder
8.2 or welding operator.

8.3 Subp. 9. **Contractor responsibility.** The contractor is responsible for establishing
8.4 and retaining the needed documents to conform to the requirements of this part.

******Highlighted portions will be updated as this rulemaking process continues******

Minnesota Board of High Pressure Piping Systems

**STATEMENT OF NEED AND
REASONABLENESS**

In the Matter of Proposed Revisions of Minnesota
Rules Chapter 5230; R-04739

[DATE]

General information:

- 1) Availability: The State Register notice, this Statement of Need and Reasonableness (SONAR), and the proposed rule will be available during the public comment period on the Agency's Public Notices website: [Rulemaking docket for Minnesota Rules Chapter 5230; R-04739 | Minnesota Department of Labor and Industry \(mn.gov\)](#)
- 2) View older rule records at: [Minnesota Rule Statutes https://www.revisor.mn.gov/rules/status/](https://www.revisor.mn.gov/rules/status/)
- 3) Agency contact for information, documents, or alternative formats: Upon request, this Statement of Need and Reasonableness can be made available in an alternative format, such as large print, braille, or audio. To make a request, contact Brittany Wysokinski, Department of Labor and Industry, 443 Lafayette Road North, St. Paul, MN 55155; telephone 651-284-5006; email dli.rules@state.mn.us; or use your preferred telecommunications relay service.

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Commonly Used Acronyms

APA	Administrative Procedures Act
ASME	American Society of Mechanical Engineers
BPE	Bioprocessing Equipment Standard
HPPS	High Pressure Piping Systems
Minn. Stat.	Minnesota Statutes
MMB	Minnesota Management and Budget
MN	Minnesota
OAH	Office of Administrative Hearings
SONAR	Statement of Need and Reasonableness

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Introduction and Overview

Introduction

The Minnesota Board of High Pressure Piping Systems (“Board”) presents these proposed permanent rule amendments that update the existing Minnesota High Pressure Piping Code to incorporate by reference the most recent editions of the national industry standards.

Background

The Minnesota Board of High Pressure Piping Systems (“Board”) proposes to adopt amendments to the rules governing the Minnesota High Pressure Piping (“HPP”) Code in Minnesota Rules, chapter 5230. Within the pipefitting industry, the HPP Code regulates high pressure steam or heating media piping systems, ammonia piping systems, and bioprocess piping systems. High pressure steam, heating media, and ammonia refrigeration systems are located almost exclusively in industrial facilities, commercial facilities, and educational and business campuses. Some of these locations include power generating facilities, petrochemical refineries, food processing companies, college campuses, and ice hockey rinks. Bioprocess piping systems are used in pharmaceutical research and production facilities that require ultra-pure steam.

The HPP Code was last updated in 2017 to incorporate by reference what, at the time, were the most recent national standards in the industry. Since that time, the national standards have gone through routine updates to incorporate the latest technology and safety practices. The proposed rule adopts the most recent editions of those standards, as amended.

In developing the proposed rules, the Board created the following committees:

- Ammonia Committee
- Steam Committee
- Welding Committee

The three committees represent the most common areas regulated under the HPP Code. The Board has historically formed committees when amending the rules in chapter 5230, and the committees were made up of members of the full Board that possess knowledge on the specific part of the HPP Code that is the subject of the committee. The Ammonia Committee held public meetings on February 10, 2022, February 22, 2022, and March 28, 2022 and made recommendations to the full Board.¹ The Steam Committee held public meetings on February 1, 2022, February 22, 2022, and March 28, 2022 and made recommendations to the full Board.² The Welding Committee held public meetings on February 3, 2022, February 14, 2022, and March 28, 2022 and made recommendations to the full Board.³ The Board discussed and voted on the recommendations to form the proposed rule at a public meeting held March 28, 2022.⁴

¹ Meeting agenda, minutes, and materials are available on the Ammonia Committee’s website: [Ammonia Committee | Minnesota Department of Labor and Industry \(mn.gov\)](#).

² Meeting agenda, minutes, and materials are available on the Steam Committee’s website: [Steam Committee | Minnesota Department of Labor and Industry \(mn.gov\)](#).

³ Meeting agenda, minutes, and materials are available on the Welding Committee’s website: [Welding Committee | Minnesota Department of Labor and Industry \(mn.gov\)](#).

⁴ A record of the vote approving the rule is included in the minutes for the March 28, 2022 Special Meeting: [Board of HPPS Minutes \(mn.gov\)](#).

Public Participation and Stakeholder Involvement

The Board held public Board meetings and committee meetings. Notice of each Board or committee meeting was posted on the website for the Board or the committee, respectively, and was emailed to members of the public who had requested to receive notice of Board meetings. All meetings were open to the public and the Board and the committees gave members of the public the opportunity to participate and speak during these meetings.

Statutory Authority

The Board's statutory authority to adopt the proposed rules is stated in the following Minnesota Statutes:

§ 326B.925, Subdivision 2. **Powers; duties; administrative support.** (a) The board shall have the power to: ...

(3) adopt the high pressure piping code that must be followed in this state and any high pressure piping code amendments thereto. The board shall adopt the high pressure piping code and any amendments thereto pursuant to chapter 14, and as provided in subdivision 6, paragraphs (b), (c), and (d)....

The quoted portion of this statute references subdivision 6 when adopting amendments to the HPP Code. Subdivision 6 states that each amendment of the HPP Code requires an affirmative two-thirds or more majority vote of all voting members of the Board in order to be including in the HPP Code rulemaking.

Minnesota Statutes, section 14.125, does not apply because this rulemaking is an amendment of existing rules for which the Legislature has not revised the statutory authority since it was granted.

Under this statute, the Board has the necessary statutory authority to adopt the proposed rules.

Reasonableness of the Amendments

General Reasonableness

The Board, with members representing various parts of the High Pressure Piping industry and affected parties, thoughtfully considered every proposed amendment and weighed multiple factors and parties' interests while keeping public safety at the forefront. The proposed amendments reflect this thoughtfulness, statutory requirements, and provide minimum standards that offer performance-based rules to the extent feasible while maintaining clarity and enforceability.

Rule-by-Rule Analysis

Many of the proposed amendments update the edition of the standard that is incorporated by reference or reflect renumbering in the underlying standard. Other amendments are intended to clarify existing requirements, as explained below:

5230.0220 Bioprocess Piping.

Subpart 1. ASME BPE. The proposed amendment updates the edition of the ASME Bioprocessing Equipment Standard (“BPE”) that is incorporated by reference. Currently, the HPP Code incorporates the ASME BPE-2016 standard by reference. This standard has now been updated to the ASME BPE-2019. The proposed rule incorporates the most recent edition of the ASME BPE by reference so that the high pressure piping industry uses the latest technology and safety practices.

5230.0260 Scope.

The proposed amendment updates the edition of the ASME Boiler and Pressure Vessel Code, section I, that is incorporated by reference. Currently, the HPP Code incorporates the 2017 edition of the ASME Boiler and Pressure Vessel Code by reference. This standard has now been updated to a 2021 edition. The proposed rule incorporates the most recent edition of the standard by reference so that the high pressure piping industry uses the latest technology and safety practices.

5230.0265 Adoption of ASME B31.1 By Reference.

The proposed amendment updates the edition of the ASME B31.1 that is incorporated by reference. Currently, the HPP Code incorporates the 2016 edition of the ASME B31.1 standard for power piping. This standard has now been updated to a 2020 edition. The proposed rule incorporates the most recent edition of the standard by reference so that the high pressure piping industry uses the latest technology and safety practices.

5230.0275 Chapter I, Scope and Definitions.

The proposed rule makes a minor change to the reference to the first subparagraph in ASME B31.1 in order to more accurately reflect the numbering in the standard. This includes calling the provision at issue a “subparagraph” rather than a “part,” changing the capitalization of certain words, and adding hyphens to certain phrases. Kilopascal (kPA) measurements were also added in addition to the current psig measurements. These small changes are being made in order to ensure the rule language mirrors the language in ASME B31.1 as closely as possible, which adds clarity and makes it easier for the public to read the rule and the standard in tandem.

5230.0325 Appendices.

The proposed rule removes Mandatory Appendix J from the list of recommended appendices because Mandatory Appendix J has been deleted from ASME B31.1. While the standard labels these provisions as “Mandatory Appendices,” it should be noted that Minnesota Rule, part 5230.0325, designates these appendices as “recommended” rather than mandatory and states that the Department will not enforce compliance with these appendices. This designation is not altered by this proposed rule. The proposed rule also adds Mandatory Appendix P to the list of recommended appendices. The 2020 edition of ASME B31.1 added a reference to Mandatory Appendix P in section 101.7.2. Therefore, the proposed rule is adding Mandatory Appendix P to the list of recommended appendices.

5230.5001 Incorporations by Reference.

Subpart 1. ANSI/IIAR 2. The proposed amendment updates the edition of the ANSI/IIAR 2 that is incorporated by reference. Currently, the HPP Code incorporates the 2014 edition of the ANSI/IIAR 2 standard for ammonia refrigeration systems. This standard has now been updated to a 2021 edition. The proposed rule incorporates the most recent edition of the standard by reference so that the high pressure piping industry uses the latest technology and safety practices.

Subpart 2. ASME B31.5. The proposed amendment updates the edition of the ASME B31.5 that is incorporated by reference. Currently, the HPP Code incorporates the 2016 edition of the ASME B31.5 standard for ammonia refrigeration piping. This standard has now been updated to a 2019 edition. The proposed rule incorporates the most recent edition of the standard by reference so that the high pressure piping industry uses the latest technology and safety practices.

5230.5005 Chapter 13, Piping.

Subpart 4. Chapter 13.3. The proposed rule updates the numbering on the Minnesota-specific subsection. Portions of the underlying standard, ANSI/IIAR 2, have been renumbered and, as a result, the proposed rule updates the references to affected subsections so that the numbering is consistent with the standard.

5230.5007 Chapter 15, Overpressure Protection Devices.

The proposed rule updates subsection numbers in subpart 1, subpart 2, and subpart 3. Portions of the underlying standard have been renumbered and, as a result, the proposed rule updates the references to affected subsections so that the numbering is consistent with the standard.

5230.5920 Qualification of Welding Procedures, Welders, and Welding Operators.

Subpart 1. Scope. The proposed rule removes the **word work** “Unfired” from the title of the Power Boiler and Pressure Vessel sections of the ASME Boiler and Pressure Vessel Code. An earlier edition of the ASME Boiler and Pressure Vessel Code **was** called Section VIII Power Boiler and Unfired Pressure Vessel. The word “Unfired” has since been removed from the title of Section VIII. Therefore, the proposed rule removes the word so that the rule is consistent with the underlying standard.

Subpart 2. Incorporation by reference. The proposed amendment updates the edition of the ASME section IX that is incorporated by reference. Currently, the HPP Code incorporates the 2017 edition of the ASME section IX of the Boiler and Pressure Vessel Code. This standard has now been updated to a 2021 edition. The proposed rule incorporates the most recent edition of the standard by reference so that the high pressure piping industry uses the latest technology and safety practices.

Subpart 5. Weld procedure and qualification requirements. The proposed rule adds clarity to the welding qualification requirements. First, the proposed amendment specifically adds welding operators to the rule. Welding operators have always been included in ASME Section IX, but this addition makes such inclusion explicit in the rule itself. Additionally, this subpart is amended to clarify that a welder or welding operator is qualified in accordance with the standard. The Board concluded that the existing language, stating that the welder is qualified according to the welding procedure, is inaccurate. According to the standard, a welder or welding operator are qualified to a welding or procedure or set of procedures that have certain essential variables which the qualifications must include. The existing language over-simplifies the qualification requirements laid out in the standard. The proposed rule references the standard directly in order to avoid any confusion.

Subpart 6. Department Evaluation. The proposed rule amends the title of this subpart so that it is clear that the Department of Labor and Industry is responsible for the evaluation. The proposed rule also clarifies that this evaluation includes a review of welder or welding operator performance qualifications and associated continuity records, and explicitly references the underlying standard.

Subpart 7. Documentation required. The proposed rule removes the phrase “welding procedure qualification” because such a document does not exist under the standard. Therefore, it is excluded from the list of mandatory documentation. Instead, the proposed rule states that “support for welder qualification” must be available “upon request” of the Department. This phrasing better reflects the fact that multiple documents may be necessary to demonstrate that a welder is qualified, such as performance qualification and continuity records.

Subpart 8. Welder identification requirement. The proposed rule clarifies the welding identification requirements that exist in the standard. First, the proposed rule removes the reference to a welding log because no formal log exists under the standard. The standard requires that each welder or welding operator must be assigned a unique identifier and the proposed rule clarifies that such an identifier can be a number or a letter. The proposed rule also adds an alternative to stamping each weld with the unique identifier, which allows a contractor to maintain records that identify the welds made by a particular welder or welding operator. This addition clarifies that there is no specific format or log that must be kept, but that some record must be kept of which particular welder or welding operator made each weld. Finally, the proposed amendment specifically adds welding operators to the rule, for the same reasons outlined in subpart 5, as described above.

Regulatory Analysis

This part addresses the requirements of Minnesota Statutes, section 14.131 (a), which require state agencies to address a number of regulatory questions in the SONAR.

A. Description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.

Persons affected by the rule amendments will likely include: high pressure pipefitters; high pressure pipefitting contractors and businesses; persons and entities owning, operating, improving, or constructing high pressure piping systems; mechanical and biotechnical design professionals; manufacturers of integrated high pressure piping systems; unlicensed individuals who wish to assist in the practical construction and installation of high pressure piping and appurtenances while in the employ of a licensed high pressure piping business; engineers; designers, owners, managers and users of high pressure piping systems; state and local inspectors and enforcement authorities of high pressure piping systems; and employees and members of the public who occupy buildings with high pressure piping systems.

The classes of persons that will bear the costs of the proposed rule are those that own high pressure piping systems. The classes of persons that will benefit from the proposed rule are those that use or own buildings with high pressure piping systems.

B. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.

Because the Board does not enforce or administer the rules and has no budget, the Board will not incur costs in enforcing the rules. The Minnesota Department of Labor and Industry (“Department”), the agency that enforces rules adopted by the Board, anticipates costs to include the cost to purchase updated

code books for state employees who inspect HPP systems or respond to HPP Code questions and the cost to revise license examinations to reflect the updated code. However, because there is a high pressure piping rule currently in place and enforced, there is little to no change in other enforcement costs.

There will be no costs for any other agency since the Department is the only agency that regulates high pressure piping systems.

The rules will not affect state revenues. The costs of enforcing the HPP Code are covered through the collection of license fees under Minnesota Statutes, section 326B.092, and filing and inspection fees under Minnesota Statutes, section 326B.02, subdivision 3. The Department does not receive general fund allocations to enforce the HPP Code.

C. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.

The purpose of the proposed rule is to adopt a high pressure piping code and adopt rules to regulate the licensure or registration of persons involved in work relating to high pressure piping. The proposed rule incorporates by reference multiple standards developed by well-respected institutions that represent the most current best practices in the high pressure piping industry. Incorporating these standards by reference is the least costly and intrusive method for achieving the purpose of the proposed rule in accordance with the statutory requirements.

D. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

No alternative methods for achieving the purpose of the proposed rule were seriously considered by the Board for this rulemaking. The American Society of Mechanical Engineers (“ASME”) and the International Institute of Ammonia Refrigeration (“IIAR”) are the only organizations that publish codes relating to design and construction of high pressure piping systems that are generally accepted and used throughout the United States. The Board began adopting established industry standards issued by ASME and IIAR in 2008, as it was considered the best method for adopting a high pressure piping code. The proposed rule adopts updated versions of the standards.

E. The probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals.

The probable costs of complying with the proposed rule when compared to the costs of complying with the existing rule are approximately the same. The costs will be borne by any owners or managers of high pressure piping systems that must comply with these rules.

These costs include contractors, high pressure piping system designers, and government inspection departments purchasing some or all updated copies of the standards, each estimated at: ASME BPE, 2019 edition (\$325); ASME Boiler and Pressure Vessel Code, section I 2021 edition (\$790); ASME B31.1, 2020 edition (\$360); ANSI/IIAR 2, 2021 revision (\$640); ASME B31.5, 2019 revision (\$255); and ASME Boiler and Pressure Vessel Code, section IX, 2021 edition (\$588).

F. The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals.

There would be no costs if the amendments were not adopted. If the new ASME and IIAR standards are not adopted, the existing HPP Code would remain in force. The existing HPP Code adopts outdated standards. Therefore, the probable consequences of not adopting the proposed rule would be that the HPP Code does not incorporate the latest technologies and safety practices in the field.

G. An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference.

There are no federal regulations governing high pressure piping that would apply to state projects, and the Department does not have jurisdiction over federally regulated projects or properties. Therefore, there are no differences to analyze.

H. An assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule.

There is no cumulative effect of the rule to consider because there are no other state or federal high-pressure piping system regulations.

Notice Plan

Minnesota Statutes, section 14.131, requires that an agency include in its SONAR a description of its efforts to provide additional notification to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made.

Notice

This Additional Notice Plan was reviewed by the Office of Administrative Hearings (“OAH”) and approved in an ****** order by Administrative Law Judge ******.

This Notice Plan includes giving notice required by statute. The Board will mail or email the Notice of Intent to Adopt to everyone who has registered to be on the Department’s and Board’s rulemaking mailing or emailing lists under Minnesota Statutes, section 14.14, subdivision 1a. The Board will also give notice to the Legislature per Minnesota Statutes, section 14.116.

In addition to the rulemaking lists required by statute, the Board will be mailing or emailing the Notice of Intent to Adopt to organizations and trade associations anticipated to be substantially affected by the proposed rules. Those organizations and associations are as follows.

Additional Notice Plan

The Board intends to send an electronic notice with a hyperlink to electronic copies of the Notice, SONAR and the proposed rule amendments to:

- a. Associated Builders and Contractors
- b. Local chapter of the Association of Minnesota Building Officials (“AMBO”)
- c. National Association of Elevator Safety Authorities (“NAESA”)
- d. Minnesota Mechanical Contractors Association
- e. Association of General Contractors of Minnesota
- f. Minnesota Utility Contractors Association
- g. Minnesota Municipal Utilities Association

- h. Builders Association of Minnesota (“BAM”)
- i. Builders Association of the Twin Cities
- j. Minnesota State Fire Chiefs Association
- k. Minnesota Plumbing, Heating and Cooling Contractors Association
- l. American Society of Plumbing Engineers – Minnesota Chapter
- m. American Society of Mechanical Engineers – Minnesota Chapter
- n. Association of Minnesota Counties
- o. Building Owners and Managers (“BOMA”)/St. Paul
- p. League of Minnesota Cities
- q. American Council of Engineering Companies of Minnesota
- r. Minnesota Pipe Trade Association
- s. Minnesota State Fire Marshal Division
- t. Minnesota Association of Townships
- u. Metropolitan Council
- v. Rochester Plumbers and Pipefitters Local Union 6
- w. Duluth Plumbers and Pipefitters Local Union 11
- x. Minneapolis Plumbers Local 15
- y. St. Paul Plumbers Local 34
- z. Minneapolis Gasfitters Local 340
- aa. St. Paul Pipefitters Local 455
- bb. Minneapolis Pipefitters Local 539
- cc. Virginia Plumbers and Pipefitters Local 589
- dd. Minnesota Association of Plumbing & Mechanical Officials
- ee. City of St. Paul Mechanical Inspection Department
- ff. City of Minneapolis Mechanical Inspection Department

Our Additional Notice Plan does not include notifying the Commissioner of Agriculture because the rules do not affect farming operations per Minnesota Statutes, section 14.111.

Performance-based Rules

Minnesota Statutes, section 14.002, requires state agencies, whenever feasible, to develop rules that are not overly prescriptive and inflexible, and rules that emphasize achievement of the agency’s regulatory objectives while allowing maximum flexibility to regulated parties and to the agency in meeting those objectives.

The proposed rules are based on national model standards. The proposed rules are performance-based in that it balances the method with the end result of the high pressure piping work within a framework of standards. The proposed rules are performance-based standards to the extent practicable while maintaining clear, predictable, and enforceable rules.

Consult with MMB on Local Government Impact

As required by Minnesota Statutes, section 14.131, the agency consulted with Minnesota Management and Budget (MMB). The Board did this by sending MMB copies of the documents that were sent to the Governor's Office for review and approval. The documents included: the Governor's Office Proposed Rule and SONAR Form; the near-final proposed rules; and the near-final SONAR. MMB Executive Budget Officer Kwesi Pasley responded, in part, as follows in a memo dated *****, 2022:

The Board will submit a copy of the cover correspondence and the response received from MMB to OAH at the hearing or with the documents it submits for Administrative Law Judge review.

Impact on Local Government Ordinances and Rules

Minnesota Statutes, section 14.128, subdivision 1, requires an agency to make a determination of whether a proposed rule will require a local government to adopt or amend any ordinances or other regulation in order to comply with the rule. The Board has determined that the proposed amendments will not have any effect on local ordinances or regulations. Local governments that currently enforce the High Pressure Piping Code will continue to enforce the High Pressure Piping Code, including these amendments, in their jurisdiction.

Costs of Complying for Small Business or City

Minnesota Statutes, section 14.127, subdivisions 1 and 2, require an agency to "determine if the cost of complying with a proposed rule in the first year after the rule takes effect will exceed \$25,000 for any one business that has less than 50 full-time employees, or any one statutory or home rule charter city that has less than ten full-time employees."

The Board has considered whether the cost of complying with the proposed rules in the first year after the rules take effect will exceed \$25,000 for any small business or small city. A small business is defined as a business (either for profit or nonprofit) with less than 50 full-time employees and a small city is defined as a city with less than ten full-time employees. The Board has determined that the cost of complying with the proposed rules in the first year after the rules take effect will not exceed \$25,000 for any small business or small city. The Board has made this determination based on the probable costs of complying with the proposed rule, as described in the Regulatory Analysis section of this SONAR. The probable costs are expected to be the costs of purchasing new code books and modifying training curricula to reflect the amendments. These costs will not exceed \$25,000 for any small business or small city during the first year after the rules take effect.

Witnesses and SONAR Exhibits

Witnesses and Other Staff

- 1) The agency expects that the proposed amendments will be noncontroversial. In the event that a hearing is necessary, the agency anticipates having the listed authors testify as witnesses in support of the need for and reasonableness of the rules.
- 2) Ms. Brittany Wysokinski, Minnesota Department of Labor and Industry. Ms. Wysokinski is an attorney to the Board and will introduce the required jurisdictional documents into the record and provide answers to APA procedural questions.
- 3) Mr. Mark Worms, Chair, Minnesota Board of High Pressure Piping Systems, will testify about the Board's interest in amending the High Pressure Piping Code and any technical questions.
- 4) Mr. Todd Green, Assistant Director of CCLD, Department of Labor and Industry, will testify about the technical aspects and the background of the proposed amendments. Mr. Green is the commissioner's designated member on the Board.
- 5) Other Department of Labor and Industry staff or Board members, if necessary, will testify about the technical aspects of the proposed amendments, the background of the proposed amendments, and the Board's interest in amending the High Pressure Piping Code.

SONAR Exhibits

- 1) *****Standards*****
- 2) Current Minnesota High Pressure Piping Code
- 3) All links within this document are available online.
- 4) Copies of Board and advisory committee meeting agendas and minutes and submitted proposal forms are available online.⁵

Conclusion

In this SONAR, the agency has established the need for and the reasonableness of each of the proposed amendments to Minnesota Rules, chapter 5230. The agency has provided the necessary notice and in this SONAR documented its compliance with all applicable administrative rulemaking requirements of Minnesota statute and rules.

Based on the forgoing, the proposed amendments are both needed and reasonable.

Mark Worms, Chair
Minnesota Board of High Pressure Piping Systems

Date

This SONAR was made available for public view, per OAH Rules, part 1400.2070, subpart 1, item E, as of _____, 2022.

⁵ See [Board of High-Pressure Piping Systems | Minnesota Department of Labor and Industry \(mn.gov\)](#).

Minnesota Board of High Pressure Piping Systems

CERTIFICATE OF THE BOARD OF HIGH PRESSURE PIPING SYSTEMS AUTHORIZING RESOLUTION

Proposed Permanent Rules Governing High Pressure Piping Systems, Minnesota Rules Chapter 5230, Revisor's ID Number RD4739

I, Mark Worms., certify that I am a member and the Chair of the Board of High Pressure Piping Systems, a Board authorized under the laws of the State of Minnesota; that the following is a true, complete, and correct copy of a resolution that the Board of High Pressure Piping Systems adopted at a properly convened meeting on July 14, 2022, that a quorum was present, and that a majority of those present voted for the resolution, which has not been rescinded or modified. The Board resolved the following:

1. The Chair of the Board of High Pressure Piping Systems, is authorized and directed to sign and to give the Notice of the Board's Intent to Adopt Rules using Alternate Notices of whether a hearing will be held in the Revisor of Statutes draft, file number RD4739, dated 04/26/2022, identified as Minnesota Rules, Chapter 5230, with any modifications approved by the Board. The Chair must give this notice to all persons who have registered their names with the Board for that purpose. The Chair must also publish the Notice in the State Register. Furthermore, the Chair is authorized and directed to do anything else needed to complete this Notice.
2. If there are fewer than 25 outstanding hearing requests, the Chair of the Board of High Pressure Piping Systems is authorized and directed to sign the Order Adopting Rules and to do anything else needed to adopt these rules without a hearing.
3. The Chair of the Board of High Pressure Piping Systems is authorized and directed to act as the Board's representative at the hearing, if one is required, and do anything else needed to adopt these rules with a hearing. This includes authority to sign the Order Adopting Rules if there are no modifications to the rules other than modifications approved by the Board.

7.14.22

Date



Mark Worms, Chair
Minnesota Board of High Pressure Piping Systems