

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.