

# Meeting Minutes: Steam Committee – Board of HPPS

Date: February 22, 2022  
Time: 9 a.m.  
Minutes by: Kyle Bain  
Location: WebEx Event

## Committee Members Present

1. Kyle Bain
2. Todd Green – CO’s Designee
3. Nirmal Jain
4. Mark Kincaid – Committee Chair
5. Patrick McCullough

## DLI Staff & Visitors

Jeff Lebowski (Gen. Counsel, DLI)  
Brittany Wysokinski (Gen. Counsel, DLI)  
Lyndy Logan (DLI)  
Duane Burbank (DLI)

## Committee Members Absent

Kent Spaulding

### 1. **Call to Order**

- A. Roll Call – the meeting was called to order at 9:03 a.m. by Chair Kincaid and roll call was completed by Kyle Bain – a quorum was met with 5 of 6 voting committee members present electronically.
- B. Announcements/Introductions
  - **Remote Meeting Statement from Chair:** Thank you for joining this remote meeting via WebEx. As the committee chair, I have determined today’s meeting is via the WebEx platform due to the COVID-19 pandemic. Per Minnesota Statutes, section 13D.021, of the Open Meeting Law, electronic meetings are acceptable when an in-person meeting is “not practical or prudent because of a health pandemic or an emergency declared under Chapter 12.” It is not practical or prudent to hold an in-person meeting because, consistent with MDH guidance, the usual meeting place is not open to the public due to the COVID-19 pandemic.
  - Committee members and attendees present on this WebEx are able to hear all discussions.
  - All handouts discussed and WebEx instructions are posted on the Committee’s website at: <https://www.dli.mn.gov/about-department/boards-and-councils/board-high-pressure-piping-systems>
  - All votes will be by roll call.
- C. WebEx instruction /procedures were read aloud.

### 2. **Approval of Meeting Agenda**

A motion was made by McCullough, seconded by Green, to approve the agenda as presented. The roll call vote was unanimous with 5 votes in favor; the motion carried.

### 3. **Approval of Previous Meeting Minutes**

A motion was made by McCullough, seconded by Green, to approve the previous Meeting Minutes as presented. The roll call vote was unanimous with 5 votes in favor; the motion carried.

### 4. **Approval of Expense Reports**

Electronic expense reports will be sent by Lyndy to Financial Services for payment.

### 5. **Special Business**

Minnesota High Pressure Piping Code: High Pressure Steam

*Kincs* – Suggested that the Committee reviewed each section of the draft.

Green – Questioned the use of “current” and we should call out a specific edition of the code.

Green – Propose that we change 5230.0260 to read “2021 edition of the ASME Boiler and Pressure Vessel Code, Section I.”

*Kincs* – Subpart 1, propose that we change the (A) to (a). Propose that we include SI units and change the presented meeting material 207 kPa (gage) from 1103 kPa (gage) (incorrect conversion was originally proposed in the meeting material).

*Kincs* – Discussion on 136.4.7. Mostly only called out for piping welds that are not able to be hydrotested or if requested by the Authorized Inspector.

Bain – Agree that requirement would not be used very often, only called out when welds are not able to be hydrotested (final welds or tie-in welds).

Green – No perceived impact to the addition of this paragraph from the departments point of view.

*Kincs* – No additional changes required due to the addition of paragraph 136.4.7.

*Kincs* – Review of the Mandatory Appendices as presented in the meeting materials. Propose removing Appendix J as it is deleted from B31.3 and adding Appendix P as recommended and O as Mandatory.

Bain – Discussion on Appendix N whether should remain as Mandatory or review individual sections within the Appendix. There are no non-metallic piping applications that would fall under the current rules based on the temperature limits per B31.1.

*Kincs* – Propose to keep 5230.0325 as written with the changes “A, D, G, H, and P are recommended rather than Mandatory.” Also, “department shall not enforce compliance with “Mandatory Appendices” A, D, G, H, or P”.

*Kincs* – Discussion on whether 5230.0335 should include 136.4.7.

Bain – Does not necessarily fit with the intent of the requirement as it refers to acceptance criteria. Par. 136.4.7 is not an acceptance criterion, so the paragraph should not be referenced in 5230.0335. Propose changing “to” to “through” in the second sentence.

Bain – Changes should be referred to as **Draft 2** for the proposed changes as discussed during this meeting.

**A motion was made by Green, seconded by Jain, to accept proposed amendments to the Steam Rules as they appear in Draft 2 (Attachment A) and bring forward to the Board. The vote was unanimous with 5 votes in favor; the motion carried.**

**6. Board Discussion**

**7. Announcements**

**8. Adjournment**

A motion made by McCullough, seconded by Bain, to adjourn the meeting at 10:12 a.m. The roll call vote was unanimous with 5 votes in favor; the motion carried.

Respectfully Submitted,

*Kyle Bain*

Committee 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.

## CODE FOR STEAM OR HEATING MEDIA PIPING SYSTEMS

### 5230.0250 MINIMUM STANDARDS.

Parts 5230.0250 to 5230.0335 form the code for steam or heating media piping systems. This code prescribes minimum requirements for design, manufacture, test, and installation of steam or heating media piping systems.

**Statutory Authority:** *MS s 326.46; 326B.90; 326B.925*

**History:** *L 2007 c 140 art 10 s 11; art 13 s 4; 34 SR 145*

**Published Electronically:** *September 16, 2009*

### 5230.0260 SCOPE.

Valves, fittings, and piping for boilers, as prescribed in the ASME Code for Power Boilers, are within the scope for this code but provisions of the ASME Code for Power Boilers shall govern where they exceed corresponding requirements of this code. For purposes of this chapter, "ASME Code for Power Boilers" means the ~~2017~~ 2021 edition of the ASME Boiler and Pressure Vessel Code, section I, as adopted and published by ASME, Two Park Avenue, New York, New York 10016. The ASME Code for Power Boilers is incorporated by reference in the code for steam or heating media piping systems. The ASME Code for Power Boilers is not subject to frequent change and a copy is available in the office of the commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

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

**Statutory Authority:** *MS s 326.46; 326B.90; 326B.925*

**History:** *L 2007 c 140 art 10 s 11; art 13 s 4; 34 SR 145; 39 SR 1343; 42 SR 1423*

**Published Electronically:** *May 15, 2018*

### 5230.0265 ADOPTION OF ASME B31.1 BY REFERENCE.

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

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145; 39 SR 1343; 42 SR 1423*

**Published Electronically:** *May 15, 2018*

**5230.0270** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

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

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

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

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

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145; 39 SR 1343*

**Published Electronically:** *September 15, 2015*

**5230.0280** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0285 CHAPTER II, DESIGN.**

Subpart 1. **Parts 1 and 2.** Notwithstanding anything to the contrary in ASME B31.1, the following portions of chapter II of ASME B31.1 are recommended rather than mandatory: Part 1, Conditions and Criteria; and Part 2, Pressure Design of Piping Components. The department shall not enforce compliance with Part 1 or Part 2 of chapter II of ASME B31.1

Subp. 2. **Section 122.5.1.** ASME B31.1, section 122.5.1 is amended by adding the following language at the end:

It is mandatory that a pressure gauge be installed on the low-pressure side of a reducing valve. Where two or more reducing valves are installed in series, a pressure gauge shall be installed on the low-pressure side of each pressure-reducing valve.

Subp. 3. **Section 122.7.** ASME B31.1, section 122.7 and all subsections are deleted.

Subp. 4. **Section 122.8.** ASME B31.1, section 122.8 and all subsections are deleted.

Subp. 5. **Section 122.9.** ASME B31.1, section 122.9 is deleted.

Subp. 6. **Section 122.11.2.** ASME B31.1, section 122.11.2 is amended by adding the following language at the end:

The discharge of a high pressure trap shall not empty into a low-pressure receiver unless first run through a flash tank or there is an ample sized vent so a trap failure could not increase the pressure in low-pressure receiver tank.

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145*

**Published Electronically:** *September 16, 2009*

**5230.0290** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

### **5230.0295 CHAPTER III, MATERIALS.**

Section 124 is amended by adding a subsection as follows:

#### **124.13. Furnace Butt Welded Pipe**

The use of furnace butt welded pipe is prohibited on steam or heating media piping systems.

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145; 42 SR 1423*

**Published Electronically:** *May 15, 2018*

**5230.0300** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

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

**Section 136.** ASME B31.1, sections 136.1 ~~through~~ 136.3.2 are deleted.

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145; 42 SR 1423*

**Published Electronically:** *May 15, 2018*

**5230.0310** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

### **5230.0315 CHAPTER VII, OPERATION AND MAINTENANCE.**

Chapter VII of ASME B31.1 is deleted in its entirety.

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145*

**Published Electronically:** *September 16, 2009*

**5230.0320** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

### **5230.0325 APPENDICES.**

Notwithstanding anything to the contrary in ASME B31.1, the following "Mandatory Appendices" in ASME B31.1 are recommended rather than mandatory: A, D, G, H, and [JP](#).

The department shall not enforce compliance with "Mandatory Appendices" A, D, G, H, or [J-P](#) of ASME B31.1.

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145*

**Published Electronically:** *September 16, 2009*

**5230.0330** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

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

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

**Statutory Authority:** *MS s 326B.925*

**History:** *34 SR 145*

**Published Electronically:** *September 16, 2009*

**5230.0340** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0350** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0360** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0370** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0380** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0390** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0400** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0410** [Repealed, 34 SR 145]

**Published Electronically:** *September 16, 2009*

**5230.0420** [Repealed, 34 SR 145]

**SUMMARY OF CHANGES (from previous Edition)**

<i>Page</i>	<i>Location</i>	<i>Change</i>	<b>Corresponding Section of Rule 5230 Potentially Affected</b>	<b>Notable Change for Rulemaking Consideration</b>		
xiii	Introduction	(1) Descriptions of B31.1, B31.3, B31.4, and B31.9 updated (2) Paragraph after (g) added (3) Eighteenth through 20th paragraphs revised	<b>5230.0275</b> <b>CHAPTER I, SCOPE AND DEFINITIONS</b>	Revise 5230.0275 to reflect reference to Subparagraph (a) of 100.1.2. This is currently referred to as "part (A)". (2018 Edition revision)  No changes affecting deletion of 100.1.3 (f)...exemption of piping included as part of shop-assembled packaged equipment built to another B31 Code.		
1	100	Second paragraph revised				
1	100.1	(1) In para. 100.1.1, second paragraph revised (2) In para. 100.1.2, paragraph after (a)(3) revised (3) In para. 100.1.4, title added (4) Paragraph 100.1.5 added				
2	Figure 100.1.2-1	Title, figure, and legend revised				
3	Figure 100.1.2-2	Title, figure, and legend revised				
4	Figure 100.1.2-3	Figure and legend revised				
5	Figure 100.1.2-4	Figure and legend revised				
6	Figure 100.1.2-5	Legend revised				
7	Figure 100.1.2-6	Figure and legend revised				
8	Figure 100.1.2-7	Legend revised				
9	Figure 100.1.2-8	Added				
7	100.2	(1) Definition of <i>covered piping system (CPS)</i> revised (2) Definitions of <i>ferrous material</i> ; <i>indication, linear indication</i> ; <i>indication, rounded indication</i> ; <i>maintenance</i> ; <i>nonferrous</i> ; <i>postweld hydrogen bakeout</i> ; and <i>volumetric examination</i> added				
16	101.1	Revised	<b>5230.0285</b> <b>CHAPTER II, DESIGN</b> <i>Parts 1 &amp; 2 - "recommended rather than mandatory"</i>	None		
16	101.2.6	Added				
16	101.3.2	In subpara. (a), last sentence added				
16	101.3.3	Added				
17	101.4.3	Added				
17	101.5.5	Added				
18	101.9	Added				
18	102.2.4	Second paragraph revised				
19	102.3.2	Title and subparas. (a), (a)(1), and (b)(1) revised				
25	104.1.2	(1) Title revised by errata (2) Subparagraph (a) revised				
27	104.3.1	Subparagraphs (c)(2) and (f) revised				
33	104.3.3	First paragraph and subparas. (c)(3)(-a) and (c)(3)(-b) revised				
35	104.7.2	Subparagraph (d) revised				
36	104.8	Revised				
37	Figure 104.8-1	Added				
36	104.8.1	Revised				
37	104.8.2	Revised				
37	104.8.3	Revised				
38	104.8.4	Revised in its entirety				
38	Figure 104.8.4-1	Deleted				
40	107.8.3	Subparagraph (e) revised	<b>5230.0285</b> <b>CHAPTER II, DESIGN</b> <i>Parts 3 through 6</i>	None - No changes affecting Section 122 modifications.		
43	Table 112-1	(1) Under "Gaskets," (d)(1), (d)(2), (d)(3), (h)(1), (h)(2), (h)(3), (i)(1), and (i)(2) revised (2) Notes (1), (9), and (11) revised				
46	114.2.1	Title added				
46	114.2.2	Title added				
46	114.2.3	Title added				
47	119.2	Revised				
49	119.7.3	First and second paragraphs and footnote 4 revised				
54	121.8.2	Subparagraph (b) revised				
55	122.1.2	Subparagraph (a) made regular text and (1) through (5) redesignated as (a) through (e)				
57	122.1.7	Subparagraphs (a)(2) and (d) revised				
59	122.2	Subparagraph (b) revised				
60	122.3.1	First paragraph revised				
61	123.3.3	Revised				
61	122.3.4	Subparagraphs (a) and (c) revised				
61	122.3.6	Subparagraph (a) made regular text and (1) through (5) redesignated as (a) through (e)				
62	122.4	Subparagraph (a)(9) revised				
70	123.1.6	(1) Subparagraphs (a), (b), and (d) [formerly (c)] revised (2) Subparagraph (c) added and subsequent paragraph redesignated			<b>5230.0295</b> <b>CHAPTER III, MATERIALS</b>	None - No changes affecting added Section 124.13 prohibiting furnace butt welded pipe.
70	123.3	Revised				
72	124.10	Revised in its entirety				
74	Chapter IV	Title revised	<b>Adopted by ASME B31.1 reference.</b> <b>CHAPTER IV, REFERENCE SPECIFICATIONS, CODES, AND STANDARDS</b>  <i>(NOTE: TITLE CHANGED FROM "DIMENSIONAL REQUIREMENTS")</i>	None. Rule 5230 adopts Chapter IV in its entirety. Changes made to titles and content do not warrant action.		
74	126	Title revised				
74	126.1	Revised				
82	Table 126.1-1	(1) ASME B16.1 title revised (2) ASME B16.36, ASME B18.31M, ASME B18.31.2, ASME B31P, Component Specifications list, and Note (2) added (3) Notes (1) and (2) redesignated as Notes (3) and (1), respectively				
74	126.4	Added				



84	Figure 127.3-1	SI equivalencies revised	<b>Adopted by ASME B31.1 reference.</b> CHAPTER V, FABRICATION, ASSEMBLY, AND ERECTION	None. Rule 5230 adopts Chapter V in its entirety. Changes made to titles and content do not warrant action.
84	127.3	Subparagraphs (c) and (e) revised		
84	127.4.1	Subparagraph (d) revised		
84	127.4.2	SI equivalencies in subparas. (b)(4) and (c)(3) revised		
85	127.4.4	(1) Second and third paragraphs redesignated as (a) and (c) (2) Subparagraph (b) added		
85	127.4.8	Subparagraphs (b) and (f) revised		
87	Table 127.4.2-1	SI equivalencies revised		
89	Figure 127.4.4-2	SI equivalencies revised		
89	Figure 127.4.4-3	SI equivalency revised		
93	Figure 127.4.8-6	Revised		
94	Figure 127.4.8-7	SI equivalency revised		
87	127.4.9	(1) First and second paragraphs designated as (a) and (b), and subparas. (a) through (c) redesignated as (b)(1) through (b)(3) (2) Subparagraph (b)(2) [formerly (b)] revised (3) Subparagraph (d) deleted (4) Subparagraph (b)(4) added		
88	127.4.10	Last sentence added		
95	129.3	First paragraph added		
98	131.1	Last paragraph added		
98	131.3	Subparagraph (b) revised		
98	131.6.1	(1) Title added (2) First paragraph and subpara. (c) revised		
98	131.6.2	Revised in its entirety		
100	132.1.1	Last paragraph added		
99	Table 131.4.1-1	In 9th, 11th through 13th, and 17th rows, degrees Celsius revised		
100	132.2	Subparagraphs (c) and (d) added and subsequent subparagraphs redesignated		
101	Table 132.1.1-1	For P-No. 9B, Group 1, degrees Celsius revised		
100	132.3.3	Revised		
103	Table 132.2-1	Revised		
102	132.5	Revised		
107	136.1.2	Subparagraph (a) revised	<b>5230.0305</b> <b>CHAPTER VI, INSPECTION, EXAMINATION, AND TESTING</b> "...sections 136.1 to 136.3.2 are deleted."	Review 136.4.6, which references new Appendix O. (2018 Edition revision)  Consider revision to clarify whether 136.3.2 is deleted...e.g., "...sections 136.1 through 136.3.2 are deleted."
108	136.3.2	Subparagraphs (c) and (e) and last paragraph revised		
108	136.4.2	(1) First paragraph redesignated as (a) and former subpara. (a) redesignated as (b) (2) Subparagraphs (a), (b)(2) [formerly (a)(2)], (b)(7) [formerly (a)(7)], and (b)(8) [formerly (a)(8)] revised (3) Subparagraph (a)(9) added		
110	136.4.3	Subparagraphs (a)(3), (b), (b)(2), and (b)(3) revised		
109	Table 136.4.1-1	In third column and Note (4), SI equivalencies revised		
110	136.4.4	Subparagraphs (a)(3), (b), (b)(2), and (b)(3) revised		
111	136.4.5	(1) First paragraph designated as (a) and subpara. (a) redesignated as (b) (2) Subparagraphs (b)(2)(-a) through (b)(2)(-c) [formerly (a)(2)(-a) through (a)(2)(-c)] and (b)(7) [formerly (a)(5)] revised (3) Note deleted (4) Subparagraphs (b)(5) and (b)(6) added and former subpara. (a)(5) redesignated as (b)(7)		
111	136.4.6	Subparagraphs (b)(2)(-a) through (b)(2)(-c) revised		
111	136.4.7	Added		
112	137.3.2	Second paragraph and subparas. (a) through (b)(2) added		
113	137.4.6	Added		
114	137.5.6	Added		
114	137.8	Added and former para. 137.8 redesignated as 137.9		
115	137.9.3	Formerly 137.8.3, subpara. (a) revised		
117	141.1	Subparagraph (i) added		
118	143	Added		
118	145	(1) Second paragraph revised (2) Third paragraph added		
119	149	Added	<b>5230.0315</b> <b>CHAPTER VII, OPERATION AND MAINTENANCE</b> "Chapter VII...is deleted in its entirety."	None
122-298	Mandatory Appendices	Appendices A, C, F, G, H, and N revised.	<b>5230.0325</b> <b>APPENDICES</b> Mandatory Appendices A, D, G, H, and J are "recommended rather than mandatory".	Revise 5230.0325 to reflect deletion of Mandatory Appendix J. Determine whether Appendices O and P are recommended, rather than mandatory; revise as appropriate. (2018 Edition revision)  Appendix F now references "latest edition" of ASME Boiler and Pressure Vessel Code. Consider revision to ensure use of 2021 Section IX.

**SUMMARY OF CHANGES (from previous Edition)**

<i>Page</i>	<i>Location</i>	<i>Change</i>	<b>Corresponding Section of Rule 5230 Potentially Affected</b>	<b>Notable Change for Rulemaking Consideration</b>
xii	Introduction	(1) Sixth and eighth paragraphs revised (2) Ninth and tenth paragraphs added	<b>5230.0275</b> <b>CHAPTER I, SCOPE AND DEFINITIONS</b>	Revise 5230.0275 to reflect reference to subparagraph (a) of 100.1.2. This is currently referred to as "part (A)".
1-9	100.1.1	First paragraph revised		
	100.1.2	In subparagraph (a), third and fourth paragraphs revised		
	100.1.4	Revised		
	100.2	(1) <i>Definitions of austenitizing; heat treatments, treatment; and heat treatments, tempering added</i> <i>subcritical heat</i> (2) <i>Definitions of covered piping systems (CPS), failure, heat treatments, reinforcement of weld, repair, and undercut revised</i>		
	Figure 100.1.2-1	Title and illustration revised		
	Figure 100.1.2-2	Title and illustration revised		
	Figure 100.1.2-3	Revised		
	Figure 100.1.2-4	Revised		
	Figure 100.1.2-5	Title and illustration revised		
	Figure 100.1.2-6	Cross-references added to illustration		
	Figure 100.1.2-7	Added		
16	101.7.2	Revised	<b>5230.0285</b> <b>CHAPTER II, DESIGN</b> <i>Parts 1 &amp; 2 - "recommended rather than mandatory"</i>	None
19	102.4.5	Subparagraph (b) revised		
22	104.1	(1) Paragraph 104.1.1 revised (2) In subparagraph 104.1.2(a), equations revised, nomenclature alphabetized, and <i>W</i> added		
27	Figure 104.3.1-1	In General Note (b), <i>d<sub>i</sub></i> corrected by errata to read <i>d<sub>i</sub></i>		
35	104.8.2	Revised		
35	104.8.4	Subparagraph (c) revised		
36	106.1	Subparagraph (a) punctuation revised	<b>5230.0285</b> <b>CHAPTER II, DESIGN</b> <i>Part 3</i>	None - No changes affecting Section 122 modifications.
67	123.1.1	Subparagraph (c) revised	<b>5230.0295</b> <b>CHAPTER III, MATERIALS</b>	None - No changes affecting added Section 124.13 prohibiting furnace butt welded pipe.
69	124.2	(1) Subparagraphs (a) and (b) revised (2) Subparagraph (e) added		
70	125.1	Title revised		
70	125.1.2	Subparagraphs (a) and (c) revised		
71	125.1.3	Subparagraph (c) revised		
73	Table 126.1-1	(1) For ASCE/SEI 7 and ASME B31J, titles revised (2) ASTM A1091/A1091M and Standards of the Expansion Joint Manufacturers Association, Inc. added (3) FCI 79-1 revised	<b>Adopted by ASME B31.1 reference.</b> <b>CHAPTER IV, DIMENSIONAL REQUIREMENTS</b>	None
85	Table 127.4.2-1	Revised	<b>Adopted by ASME B31.1 reference.</b> <b>CHAPTER V, FABRICATION, ASSEMBLY, AND ERECTION</b>	None
93	129.3.3.1	First paragraph revised		
93	129.3.4	Revised		
93	129.3.4.1	First paragraph revised		
94	Table 129.3.3.1-1	Title revised		
96	Table 129.3.4.1-1	Title revised		
97	Table 131.4.1-1	(1) In fifth column, first entry revised		
98	Table 132.1.1-1	(1) In second column, penultimate entry revised (2) Notes (5) and (6) revised		
99	132.4	Title revised		
104	136.1.1	Revised		
104	136.1.2	Subparagraph (a) revised		
104	136.2	Revised in its entirety		
105	136.3.2	(1) Subparagraph (d) revised (2) Last paragraph revised		
108	136.4.6	Subparagraph (c) added		
118-298	Mandatory Appendices	Appendices A, D, F, G, and N revised. Appendix J deleted - "Quality Control Requirements for Boiler External Piping (BEP)". Appendix O added - "Use of Alternative Ultrasonic Acceptance Criteria". Appendix P added - "Metallic Bellows Expansion Joints".	<b>5230.0325</b> <b>APPENDICES</b> Mandatory Appendices A, D, G, H, and J are "recommended rather than mandatory".	Revise 5230.0325 to reflect deletion of Mandatory Appendix J. Determine whether Appendices O and P are recommended, rather than mandatory; revise as appropriate.