

1 Department of Labor and Industry

2

3 Adopted Permanent Rules Relating to Boilers and Power Boats

4

5 Rules as Adopted

6 5225.0010 SCOPE.

7 This chapter only addresses the manufacture, installation,
8 repair, operation, safety, and inspection of boilers and
9 pressure vessels as defined in parts 5225.0090 to 5225.9000
10 pursuant to Minnesota Statutes, sections 183.375 to 183.62.

11 Other related codes on high pressure piping, building,
12 electrical, and plumbing are available from State Documents,
13 Department of Administration, 117 University Avenue, Saint Paul,
14 Minnesota, 55155.

15 5225.0090 INCORPORATION BY REFERENCE.

16 Subpart 1. General. To the extent referred to in this
17 chapter, the codes and publications described in this part are
18 incorporated by reference.

19 Subp. 2. American Society of Mechanical Engineers Boiler
20 and Pressure Vessel Code. The American Society of Mechanical
21 Engineers Boiler and Pressure Vessel Code is written and
22 published by the American Society of Mechanical Engineers,
23 United Engineering Center, 345 East 47th Street, New York, New
24 York 10017 and can be purchased from the same source. It is
25 available for inspection at the Hill Reference Library, 80 East
26 Fourth Street, Saint Paul, Minnesota 55102. It is subject to
27 frequent change. The publication dates vary by subject. The
28 most recent publication: July 1, 1986, as amended December 31,
29 1986, and December 31, 1987.

30 Subp. 3. National Board Inspection Code. The National
31 Board Inspection Code is written and published by the National
32 Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper
33 Avenue, Columbus, Ohio 43229 and can be purchased from the same
34 source. It is available for inspection at the Minnesota Law
35 Library, 117 University Avenue, Saint Paul, Minnesota 55155. It

1 is subject to frequent change. The publication date varies.
2 The most recent publication: July 1, 1986, as amended December
3 31, 1986, and December 31, 1987.

4 Subp. 4. **American Society of Mechanical Engineers Codes**
5 **and Standards.** The American Society of Mechanical Engineers
6 Codes and Standards are submitted for publication to the
7 American National Standards Institute, 1430 Broadway, New York,
8 New York 10018 and can be purchased from the same source. They
9 are available for inspection at the Hill Reference Library, 80
10 West Fourth Street, Saint Paul, Minnesota 55102. They are
11 subject to frequent change. The publication dates vary by
12 subject. The most recent publication: July 1, 1986, as amended
13 December 31, 1986, and December 31, 1987.

14 5225.0500 EXAMINATIONS.

15 Subpart 1. **Preparation of written examination.** The
16 examination questions will be prepared by the chief boiler
17 inspector. All examinations must be written unless the
18 applicant is unable to write, in which case the examination will
19 be oral for a special or second class license. The right to an
20 oral examination for a first or chief class license shall be
21 determined by the chief boiler inspector based on the
22 applicant's ability to demonstrate reading comprehension of
23 statutes, rules, technical boiler operation manuals, and safety
24 warnings. Decisions of the chief boiler inspector regarding
25 application for oral examination may be appealed to the
26 commissioner under part 5225.3200. A written record of the
27 examination shall be made, and examination papers will be kept
28 on file for a period of at least one year.

29 Subp. 2. **Minimum grade.** No license of any class will be
30 granted to any applicant who fails to obtain a score of 75
31 percent in an examination, nor may any other grade of license be
32 granted.

33 Subp. 3. **Effect of failure.** Applicants who fail to pass
34 an examination shall not be eligible to take another examination
35 for the same class of license within the following periods:

1 A. special engineer's, hobby, or pilot's license, ten
2 days;

3 B. first and second class license, 30 days; and

4 C. chief's license, 60 days.

5 Failure of an applicant to obtain a passing score will not
6 affect the status of any license previously granted, but the fee
7 paid for the examination will not be refunded.

8 5225.0550 DOCUMENTATION OF EXPERIENCE REQUIREMENTS FOR LICENSURE
9 AS A BOILER OPERATOR.

10 Subpart 1. Compliance requirements. All applicants must
11 comply with chapter 5225 and Minnesota Statutes, sections
12 183.375 to 183.62. Applicants with previous experience in a
13 jurisdiction requiring licensure must show proof of compliance
14 with the licensure requirements of that jurisdiction in order to
15 receive credit for the experience. All applicants for licensure
16 as a pilot, hobby boiler operator, or boiler operator shall
17 provide documentation of operating experience for the level of
18 class/grade applied for in accordance with subparts 2 to 9.

19 Subp. 2. Special class experience requirements. A special
20 class license requires no previous experience and a signed
21 application form.

22 Subp. 3. Second class experience requirements.

23 A. A second class license requires: one year of
24 experience on a boiler of proper size to receive the second
25 class license as documented by:

26 (1) one year of special class licensed operation;

27 or

28 (2) one year of conventional or nuclear
29 experience as a coal passer, fireman, oiler, water tender,
30 engineer, boiler tender, engineering or machinery watch officer,
31 engine room supervisor, or propulsion engineer; or

32 (3) one year of actual experience operating a
33 boiler of sufficient size to qualify for a second class license
34 under Minnesota Statutes, section 183.51.

35 B. Acceptable forms for documentation are:

1 (1) an application form; and

2 (2) a valid, current Minnesota special class
3 license; or

4 (3) a sworn affidavit signed by a plant manager,
5 an officer of the company responsible for engineering
6 operations, or a supervisory engineer of a utility plant of a
7 plant of a size equal to or greater than required for a first
8 class license under Minnesota Statutes, section 183.51, or a
9 sworn affidavit signed by two or more shift engineers of a plant
10 of a size equal to or greater than required for a first class
11 license under Minnesota Statutes, section 183.51; or

12 (4) a DD 214 separation form, a discharge, a DD
13 792 performance evaluation, or an affidavit signed by a superior
14 officer.

15 Subp. 4. First class experience requirements.

16 A. A first class license requires three years of
17 experience on a boiler of proper size to receive the first class
18 license as documented by:

19 (1) one year of special class licensed operation
20 and two years of second class licensed operation, or two years
21 of special class licensed operation and one year of second class
22 licensed operation, or three years of special class licensed
23 operation; or

24 (2) three years experience as a coal passer,
25 fireman, oiler, water tender, engineer, boiler tender,
26 engineering or machinery watch officer, engine room supervisor,
27 or propulsion engineer; or

28 (3) three years of actual experience operating a
29 boiler of sufficient size to qualify for a first class license
30 under Minnesota Statutes, section 183.51.

31 B. Acceptable forms for documentation are:

32 (1) an application form; and

33 (2) a valid, current Minnesota boiler operator's
34 license; or

35 (3) a sworn affidavit signed by a plant manager,
36 an officer of the company responsible for engineering

1 operations, or a supervisory engineer of a utility plant or a
2 plant of a size equal to or greater than required for a first
3 class license under Minnesota Statutes, section 183.51, or a
4 sworn affidavit signed by two or more shift engineers of a plant
5 of a size equal to or greater than required for a first class
6 license under Minnesota Statutes, section 183.51; or

7 (4) a DD 214 separation form, a discharge, a DD
8 792 performance evaluation, or an affidavit signed by a superior
9 officer.

10 Subp. 5. Chief class experience requirements.

11 A. A chief class license requires five years of
12 experience on a boiler of proper size to receive the chief class
13 license as documented by:

14 (1) any combination of five years licensed boiler
15 operation with at least one year as a first class license
16 holder; or

17 (2) five years experience as an engineer, boiler
18 tender, engineering or machinery watch officer, engine room
19 supervisor, or propulsion engineer; or

20 (3) five years of actual experience operating a
21 boiler of sufficient size to quality qualify for a chief class
22 license under Minnesota Statutes, section 183.51, of which at
23 least two years must have been in a supervisory capacity either
24 as a shift engineer in charge or as the chief engineer of the
25 facility from which the claimed experience was obtained.

26 B. Acceptable forms for documentation are:

27 (1) an application form; and

28 (2) a valid, current Minnesota first class boiler
29 operator's license; or

30 (3) a sworn affidavit signed by a plant manager,
31 an officer of the company responsible for engineering
32 operations, or a supervisory engineer of a facility where the
33 claimed experience was obtained; chief engineer of a utility
34 plant or a plant of a size equal to or greater than required for
35 a first class license under Minnesota Statutes, section 183.51;
36 or

1 (4) a DD 214 separation form, a discharge, a DD
2 792 performance evaluation, or an affidavit signed by a superior
3 officer.

4 Subp. 6. Requirements for Grade A licensure. The
5 requirements for a Grade A license are:

6 A. Second Class: one year of documented operation of
7 a high pressure boiler which must include one year of operation
8 of a steam engine or turbine.

9 B. First Class: three years of documented operation
10 of a high pressure boiler of which at least two years must
11 include operation of a steam engine or turbine.

12 C. Chief Class: five years of documented operation
13 of a high pressure boiler, including at least two years acting
14 as a shift engineer, and two years of operation of a steam
15 engine or turbine.

16 Subp. 7. Pilot license experience documentation. An
17 applicant for a pilot license for operation of a boat for hire
18 must have at least one month or 30 days of experience operating
19 a boat of not less than 20 feet in length and powered by a motor
20 of not less than 50 horsepower, as rated by the manufacturer.
21 Unless the applicant has a valid United States Coast Guard
22 pilot's license, an affidavit of experience must be submitted by
23 a person with sufficient knowledge of the applicant's experience
24 prior to the applicant taking the examination. The person
25 signing the affidavit must hold a valid Minnesota pilot's
26 license or a United States Coast Guard pilot's license.

27 Subp. 8. Traction engine or hobby boiler license
28 experience documentation. An applicant for a hobby boiler
29 license must have at least 25 hours actual experience operating
30 a steam traction engine under the supervision of a properly
31 licensed operator, or a valid Minnesota second class, or higher,
32 boiler operator's license. An affidavit of experience must be
33 submitted by a person with sufficient knowledge of the
34 applicant's experience prior to the applicant taking the
35 examination. The person signing the affidavit must have
36 observed the applicant operating the steam traction engine and

1 must possess either a valid Minnesota hobby boiler license or a
2 valid second class, or higher, Minnesota boiler operator's
3 license.

4 Subp. 9. Other acceptable supporting documentation.
5 Position descriptions, payroll records, jurisdiction or insurer
6 inspection records, and documentation as to the size of the
7 boilers operated may be used to support the application under
8 subparts 2 to 5. Other operating experience may qualify the
9 applicant for licensure under this part provided that the
10 experience demonstrates the applicant's ability to safely and
11 effectively perform at the level of licensure applied for. A
12 decision of the chief inspector regarding applicability of other
13 experience may be appealed to the commissioner pursuant to part
14 5225.3200.

15 Subp. 10. Year defined. For purposes of this chapter, a
16 "year" is at least 2,000 hours.

17 5225.0600 PROHIBITION AGAINST FALSE STATEMENTS IN APPLICATION.

18 Any material false statement in an application or affidavit
19 such that the license would not have been granted if the
20 accurate information had been provided, shall render the license
21 void. The license shall not be determined to be void until the
22 license holder has been provided with the opportunity for a meet
23 and confer conference and/or an administrative hearing pursuant
24 to part 5225.0880, subpart 5, and the requirements of the
25 Administrative Procedure Act, and the charge of a materially
26 false statement is upheld. In lieu of requesting an
27 administrative hearing pursuant to part 5225.0880, subpart 5,
28 the license holder may reapply for licensure by providing the
29 proper documentation, retaking the appropriate examination and
30 paying the application fee, or may voluntarily relinquish the
31 license.

32 5225.0700 LOSS OR DESTRUCTION OF LICENSE.

33 Upon presentation of a written statement of fact showing
34 that a license has been lost, destroyed, or not received, a
35 substitute license will be issued for a fee set by the

1 commissioner of labor and industry.

2 5225.0880 DISCIPLINARY PROCEDURES.

3 Subpart 1. License revocation suspensions. The
4 commissioner may suspend or revoke the engineer's or pilot's
5 license, direct the person to cease the action or operation,
6 seal the boiler or pressure vessel, or seek a restraining order
7 in district court if the holder of a license of any class,
8 including pilots of boats for hire, or the owner of a boiler or
9 pressure vessel violates any provision of Minnesota Statutes,
10 sections 183.375 to 183.62, or this chapter, or operates or
11 allows a boiler or pressure vessel to be operated under unsafe
12 or dangerous conditions, or the holder of a license of any
13 class, including pilots of boats for hire, has obtained a
14 license of any grade based on a materially false application or
15 affidavit, or an owner of a boiler fails to employ properly
16 qualified engineers to operate the boiler or fails to make
17 necessary repairs to an unsafe boiler or pressure vessel. In
18 deciding what action to take, the commissioner shall consider
19 the seriousness of the violation, the likelihood of a repeat
20 occurrence, and the actual or potential threat to property or
21 life caused by the violation.

22 Subp. 2. Complaints. All complaints related to license
23 qualification or unsafe operating practices, whether filed by a
24 boiler inspector of the Department of Labor and Industry or any
25 other person, must be in writing to the chief boiler inspector
26 on forms prescribed by the commissioner. Notices of unsafe
27 objects shall be prepared by a boiler inspector of the
28 Department of Labor and Industry on forms prescribed by the
29 commissioner.

30 Upon the filing of a complaint with the chief boiler
31 inspector charging the owner or license holder with engaging in
32 a prohibited or unsafe activity described in subpart 1, the
33 chief boiler inspector shall direct an investigation as
34 necessary and report to the commissioner if the chief boiler
35 inspector believes further action is necessary.

1 Unless the commissioner seeks a restraining order in
2 district court, the commissioner shall serve on the owner or
3 license holder, by first class or certified mail or in person,
4 notice of the alleged violation, the proposed action to be
5 taken, and of the opportunity for a conference and a contested
6 case proceeding under subpart 3.

7 Subp. 3. Show cause conference. If the charge is that a
8 license holder or owner has violated a provision of Minnesota
9 Statutes, sections 183.375 to 183.62 or this chapter, or is
10 operating a boiler or pressure vessel in an unsafe or dangerous
11 condition, or with unlicensed or improperly licensed engineers,
12 or a decision of a boiler inspector is being appealed pursuant
13 to part 5225.3200, the commissioner shall give the owner or
14 license holder the opportunity to request a conference to show
15 cause (1) why an order should not be issued suspending or
16 revoking the holder's license or directing the person to cease
17 and desist the prohibited activity or operation, or (2) why the
18 decision of the boiler inspector should not stand.

19 The person charged may request a show cause conference in
20 writing that must be received by the commissioner within ten
21 working days after the notice provided for in subpart 2 was
22 served. If a timely request is not made, the commissioner may
23 issue the proposed order.

24 The show cause conference must be scheduled within 20
25 working days of the receipt of a timely request. Findings and
26 an order must be served and filed by the commissioner within ten
27 working days after the conference is held.

28 Orders issued under this subpart must include notice of the
29 right to a contested case proceeding under the Administrative
30 Procedure Act before an administrative law judge. An owner or
31 license holder who disagrees with the commissioner's order
32 issued pursuant to this subpart may request a contested case
33 hearing for a final determination in accordance with subpart 7.
34 If a contested case hearing is requested, the commissioner's
35 order shall be stayed pending a final determination after the
36 contested case hearing.

1 Subp. 4. Unsafe objects; administrative conference. If an
2 inspector of the Department of Labor and Industry has determined
3 that the operation of a boiler by an unlicensed or improperly
4 licensed person creates an imminent danger to human life or
5 property or that repair or replacement is necessary to ensure
6 safe operation of a boiler or pressure vessel, a notice of
7 unsafe object must be placed on the boiler or pressure vessel.
8 In addition to the notice requirements of subpart 2, the notice
9 of unsafe object must state that the boiler or pressure vessel
10 may not be operated until the object is satisfactorily repaired
11 or replaced and the notice of unsafe object is removed by the
12 inspector, until properly licensed persons are assigned to
13 operate the equipment, or the commissioner orders the notice of
14 unsafe object removed from the boiler or pressure vessel.

15 The commissioner shall give the owner of the boiler or
16 pressure vessel the opportunity for a conference to show cause
17 why the boiler or pressure vessel should not remain sealed until
18 repaired or replaced or until properly licensed persons are
19 available to operate the boiler. The owner must request a show
20 cause conference in writing, in person, or by phone, within
21 three working days of the date the notice of unsafe object was
22 placed on the boiler or pressure vessel. If a request for a
23 show cause conference is not timely received, the commissioner
24 may order that the boiler or pressure vessel remain sealed
25 pending repair, replacement, or operation by properly licensed
26 personnel.

27 The show cause conference must be held within two working
28 days of receipt of a timely request or at a later date upon
29 mutual consent of the parties. Immediately upon completion of
30 the conference, the commissioner must provide a verbal order, to
31 be followed by written findings and an order, that must be
32 served and filed within ten working days after the conference is
33 held.

34 Orders must include notice of the right to a contested case
35 proceeding under the Administrative Procedure Act before an
36 administrative law judge. An owner who disagrees with the

1 commissioner's order issued pursuant to this part, may request a
2 contested case hearing for a final determination in accordance
3 with subpart 7. Once a notice of unsafe object is placed on the
4 boiler or pressure vessel, the boiler or pressure vessel may not
5 be operated pending a show cause conference or a contested case
6 proceeding until the tag is removed by the inspector, or the
7 commissioner issues an order allowing the object to be placed
8 into service.

9 Subp. 5. **Materially false statement; meet and confer**
10 **conference.** If the charge is that the holder of a license
11 obtained the license based on a materially false application or
12 affidavit, the commissioner shall give the license holder the
13 opportunity for an informal meet and confer session with
14 representatives of the Department of Labor and Industry. The
15 license holder must request the conference in writing within ten
16 days of the date the notice in subpart 2 was served. The
17 session must be scheduled within 20 working days of the receipt
18 of a timely request.

19 If no timely request for a meet and confer session is
20 received, or if no mutually acceptable resolution can be reached
21 at the meet and confer session, the commissioner shall initiate
22 a contested case hearing pursuant to the Administrative
23 Procedure Act to determine whether the license should be revoked.

24 Subp. 6. **Manner of conference.** A show cause conference or
25 a meet and confer session shall be conducted in an informal
26 manner. No transcript will be made; however, the proceedings
27 may be recorded. Each party may be represented by an attorney
28 or may be accompanied by another person not an attorney.
29 Parties may produce witnesses and documents to support their
30 position.

31 Subp. 7. **Contested case hearing.** A person who disagrees
32 with an order of the commissioner issued pursuant to subpart 3
33 or 4 may request a de novo hearing under the contested case
34 proceedings of the Administrative Procedure Act within 30 days
35 of service of the order. Upon receipt of the findings of fact
36 and recommendations of the administrative law judge, the

1 commissioner shall serve and file a final order by regular or
2 certified mail. This order shall be the order of the
3 commissioner in a contested case.

4 Subp. 8. Injunctive relief. At any time before or after
5 the commissioner issues an order under this part, the
6 commissioner may discontinue the administrative proceedings and
7 initiate an action in district court for injunctive relief. A
8 notice of unsafe object or an order of the commissioner issued
9 pursuant to subpart 4, shall remain in effect until a district
10 court judge orders otherwise.

11 5225.0900 DISPLAY OF LICENSE.

12 Licenses granted must be placed in a glassed frame and be
13 displayed in a conspicuous place in the engine or boiler room,
14 or pilot's station. Boiler plants operated by a contract boiler
15 operator must have a copy of the engineer's license of each
16 person who may be operating the boiler posted in each boiler
17 room.

18 5225.1000 BOILER HORSEPOWER RATING.

19 In rating the horsepower of a boiler plant, inspectors
20 shall use the horsepower of each boiler and compute the total
21 horsepower of all boilers connected to the header, whether all
22 the boilers are in use or not. It is the duty of all boiler
23 inspectors, including those employed by insurance companies, to
24 promptly report to the chief boiler inspector, any plant in
25 which the engineer has no license or a license of a lower class
26 than that required by law for the horsepower of the plant.

27 Ten kilowatts equals one boiler horsepower for the engineer
28 license requirement.

29 5225.1200 INSURANCE COMPANY INSPECTORS.

30 Subpart 1. License requirement. Inspectors in the employ
31 of insurance companies shall possess a National Board of Boiler
32 and Pressure Vessels Inspectors' Commission issued by the
33 National Board of Boiler and Pressure Vessel Inspectors, and
34 shall place on inspection reports the serial number of their

1 National Board of Boiler and Pressure Vessel Inspectors'
2 Commission or Minnesota state certificate of competency. A
3 Minnesota state certificate of competency is issued by the
4 Boiler Inspection Division according to Minnesota Statutes,
5 section 183.38, subdivision 2.

6 Subp. 2. Examination. State or insurance company boiler
7 inspectors seeking a license as authorized shop inspectors on
8 new construction of boilers and/or pressure vessels shall
9 qualify by passing a written examination prepared by the
10 National Board of Boiler and Pressure Vessel Inspectors. The
11 examinations will be held at Saint Paul, Minnesota, by the
12 Boiler Inspection Division at times the commissioner may
13 prescribe. Applicants qualifying shall obtain a National Board
14 of Boiler and Pressure Vessel Inspectors' commission from the
15 National Board of Boiler and Pressure Vessel Inspectors. The
16 serial number of the commission must be registered in the office
17 of the chief boiler inspector. Inspectors having National Board
18 of Boiler and Pressure Vessel Inspectors' commissions obtained
19 in other states shall register the serial number of their
20 commission with the commissioner and furnish a photocopy of
21 their current National Board of Boiler and Pressure Vessel
22 Inspectors' Commission to the Boiler Inspection Division.

23 5225.1350 PROPERTY DAMAGE OR PERSONAL INJURY REPORT.

24 Insurance inspectors or owners shall make a written report
25 to the chief boiler inspector of incidents involving boilers and
26 pressure vessels covered under this chapter that result in
27 personal injury, total destruction of the object, or property
28 damage involving repairs not of a routine nature. These
29 incidents shall be reported on the National Board of Boiler and
30 Pressure Vessel Accident Report form.

31 5225.2100 STAMPS ON BOILER AND PRESSURE VESSELS.

32 Every boiler or pressure vessel, unless specifically
33 exempted by Minnesota Statutes, section 183.56, for use in this
34 state must conform in every detail to the boiler and pressure
35 vessel laws of the state and rules adopted by the Department of

1 Labor and Industry, and when correctly constructed the boiler or
2 pressure vessel must be stamped with the respective American
3 Society of Mechanical Engineers code symbol, and the National
4 Board symbol (NB) or Minnesota Special (MINN. SPC). Stamping
5 must be witnessed by an inspector holding a National Board
6 commission. Information as to construction stamp requirements
7 shall be provided to contractors by the chief boiler inspector.
8 The chief boiler inspector may, at the request of the
9 manufacturer, designate any inspector possessing the
10 qualifications required by part 5225.1200 to make the requested
11 shop inspection, for which the manufacturer shall pay the
12 required fee pursuant to part 5225.8600, plus travel expenses.

13 5225.2200 ITEMS REQUIRING INSPECTION.

14 The authorized boiler inspector shall inspect all boilers
15 or steam generators, fired or unfired pressure vessels, and
16 appurtenances for their safe operation and condition, and all
17 pressure piping connecting them to the appurtenances, and all
18 piping up to the first stop valve, or the second valve when two
19 are required in accordance with inspection requirements in
20 Section 1 of the American Society of Mechanical Engineers Boiler
21 and Pressure Vessel Code and the National Board Inspection
22 Code. They must be properly prepared for inspection and the
23 inspector given at least 48 hours' notice before the time of the
24 inspection.

25 Any pressure piping to the boiler, steam generator, or
26 pressure vessel appurtenances such as water column, blowoff
27 valve, feedwater regulator, superheater, economizer, or stop
28 valves which are to be shipped connected to the boiler, steam
29 generator, or pressure vessel as a unit, must be hydrostatically
30 tested with the boiler, steam generator, or pressure vessel, and
31 the hydrostatic test must be witnessed by an authorized
32 inspector, and if recognized as being in conformance with
33 accepted procedures by the inspector, so noted on the data sheet
34 by the inspector.

35 5225.2400 TITLE TRANSFER TO USED BOILERS OR VESSELS.

1 Before the transfer of the title to a used boiler or
2 pressure vessel and its future use in another location, the
3 owner shall cause it to be inspected by the state or insurance
4 company boiler inspector, and in computing the safe working
5 pressure, the inspector shall use a safety factor of at least
6 six on noncode boilers and pressure vessels having a butt strap
7 joint and at least a factor of seven on a lap seam joint. The
8 maximum allowable working pressure for objects covered under
9 Minnesota Statutes, section 183.411 must not exceed the
10 requirements of the American Society of Mechanical Engineers
11 Boiler and Pressure Vessel Code for determining working pressure.

12 5225.2500 LOW WATER DEVICES.

13 Subpart 1. and 2. [See Repealer.]

14 Subp. 3. Requirements. The following must be equipped
15 with a low water cutout that will shut off the fuel supply in
16 case of a low water condition:

17 A. each automatically fired steam boiler; and

18 B. each automatically fired hot water heating boiler
19 or other hot liquid boiler plants of two or more boilers with
20 individual isolating valves connected to a common header with a
21 total heat input exceeding 750,000 Btu per hour input.

22 Subp. 4. Flow-sensing device required. The following must
23 have a flow-sensing device installed in the outlet piping
24 instead of the low water fuel cutoff required in subpart 3 to
25 automatically cut off the fuel supply when the circulating flow
26 is interrupted:

27 A. a coil type boiler plant exceeding 750,000 Btu;
28 and

29 B. a watertube boiler plant with heat input greater
30 than 750,000 Btu per hour requiring forced circulation to
31 prevent overheating of the coils or tubes.

32 5225.2600 REPORTING REPAIRS AND ALTERATIONS.

33 Subpart 1. Prior notice of repair or alteration. The
34 owner or person in charge of a boiler, steam generator, or
35 pressure vessel shall notify the Boiler Inspection Division or

1 if the object is insured, the owner or person in charge shall
2 notify the insurer before each repair not of a routine nature
3 and all alterations made to the pressure containing parts of a
4 boiler or pressure vessel, and the authorized inspector will
5 compute the safe working pressure of the repair or alteration.

6 Subp. 2. Standard of repairs. The National Board of
7 Boiler and Pressure Vessel Inspectors' repair (R) stamp or
8 applicable American Society of Mechanical Engineers Boiler and
9 Pressure Vessel Code symbol stamp is required for welded repairs
10 not of a routine nature to any boiler or pressure vessel subject
11 to inspection as specified in Minnesota Statutes, sections
12 183.375 to 183.62.

13 All alterations must be in compliance with the latest
14 edition of the National Board Inspection Code and the
15 referencing sections of the American Society of Mechanical
16 Engineers Boiler and Pressure Vessel Code.

17 Repairs or alterations must be reported to the authorized
18 inspection agency responsible for the inservice inspection of
19 the boiler or pressure ~~vessels~~ vessel by the repair firm as
20 required by the National Board Inspection Code. Required
21 certification of repairs and alterations must be made by an
22 inspector holding a National Board of Boiler and Pressure Vessel
23 Inspectors' commission, who is employed by an authorized
24 inspection agency under contract with the firm doing the
25 repairs. Authorized inspection agencies are:

26 A. a jurisdictional authorized inspection agency;

27 B. the Minnesota Department of Labor and Industry,
28 Division of Boiler Inspection; and

29 C. ~~the~~ an authorized inspection agency which insures
30 the boiler or pressure vessel.

31 It is the responsibility of the organization making the
32 repair or alteration to provide for inspection, documentation,
33 and certification of the work, and to ensure acceptance of the
34 work by an authorized inspection agency.

35 Completion of the National Board of Boiler and Pressure
36 Vessel R-1 form is required for all repairs not of a routine

1 nature and all alterations. It is the responsibility of the
2 repair organization to prepare the form and submit it to the
3 authorized inspector for acceptance. Distribution of the form
4 must be as provided in the National Board Inspection Code with
5 one copy of the completed form sent to the Minnesota Department
6 of Labor and Industry, Boiler Inspection Division.

7 5225.2610 OWNER REPAIR PROGRAM.

8 An owner with boilers exceeding 200,000 pounds per hour may
9 perform repairs ~~or alterations~~ to their boiler systems,
10 excluding high pressure piping under the authority of Minnesota
11 Statutes, section 326.461, subject to written approval of their
12 repair program from the Department of Labor and Industry.

13 The owner repair program must include: organization,
14 design control, material control, control of work, inspection,
15 welding, nondestructive testing, records, repair reporting, and
16 provision for system test and inspection by an authorized
17 national board inspector. Before acceptance of the repair
18 program, the chief boiler inspector must review the program.
19 The program shall not be approved until the chief boiler
20 inspector is satisfied that the program elements listed in this
21 part are complete and acceptable and the allowance for
22 independent third-party inspection controls are adequate and
23 acceptable.

24 The commissioner of the Department of Labor and Industry
25 may withdraw program approval, with cause, upon the
26 recommendation of the chief boiler inspector. The commissioner
27 must provide the owner with written notification of the
28 department's intent to withdraw program approval and the reasons
29 for the action. The owner, upon receipt of the commissioner's
30 notification, has 30 calendar days to implement the required
31 corrective actions to the satisfaction of the chief boiler
32 inspector. The acceptance or rejection of all corrective
33 actions shall be by the chief boiler inspector and must be in
34 writing.

35 5225.3100 INSURED COVERAGE REPORT.

1 Every insurance company insuring a boiler or pressure
2 vessel must notify the Boiler Inspection Division inspector in
3 writing within 30 days of the effective date of coverage
4 (including binders). It must also mail a duplicate of the
5 notification to the assured, who shall, until receipt of
6 exemption certificate, display the notice in a conspicuous place
7 near the boiler or pressure vessel. The person, firm, or
8 corporation operating the insured boiler or pressure vessel
9 shall procure and display an exemption certificate within a
10 period of 60 days from the date of coverage, and keep it
11 displayed in a conspicuous place near the boiler or pressure
12 vessel. If the certificate is not displayed within 60 days from
13 date of coverage the boiler inspector shall make the usual and
14 customary inspection of the boiler or pressure vessel and charge
15 the statutory fee.

16 5225.3200 APPEALS.

17 Any person aggrieved by any action or decision of a boiler
18 inspector may request a reconsideration by the commissioner, in
19 the manner provided for a conference under part 5225.0880,
20 subpart 3, who may affirm, modify, or rescind the action or
21 decision. The parties affected by an action or decision of the
22 commissioner may request a hearing at the Office of
23 Administrative Hearings under Minnesota Statutes, sections 14.57
24 to 14.70.

25 5225.3400 STANDARDS FOR BOILERS.

26 Subpart 1. Blowdown. The blowdown from a boiler or
27 boilers that may enter a sanitary sewer system or blowdown which
28 is a hazard to human life or property must pass through some
29 form of blowoff equipment that will reduce pressure and
30 temperature. The temperature of the water leaving the blowoff
31 equipment must not exceed 180 degrees Fahrenheit or a pressure
32 of five pounds per square inch gage. This part does not apply
33 to boiler blowoff tanks which are connected to boilers that
34 operate at 400 pounds per square inch or over.

35 Subp. 2. Blowoff tank. A boiler blowoff tank must be

1 designed and correctly fabricated in accordance with the
2 American Society of Mechanical Engineers Boiler and Pressure
3 Vessel Code, Section VIII, Division 1 for at least 25 percent of
4 the safe working pressure of the boilers to which it is
5 connected, but in no case need a tank be constructed for a
6 working pressure more than 100 pounds per square inch. The
7 blowoff tank must be of a volume equal to at least twice the
8 volume of water removed from the boiler when the normal water
9 level is reduced not less than four inches.

10 Subp. 3. **Water outlet.** The water outlet connection must
11 be connected to the tank so that the tank will remain half full
12 of water after each blowdown, and this vertical leg must extend
13 to within six inches of the bottom of the tank and the top of
14 this water seal must also have a three-fourths inch opening to
15 act as a syphon breaker.

16 Subp. 4. **Size opening.** The size opening of the blowoff
17 line inlet, water outlet, and vent must have an area ratio of at
18 least 1:1:5 to the nearest pipe size. Table 1 in part 5225.3500
19 gives ratio of openings.

20 Subp. 5. **Inlet.** The inlet must enter the shell at a
21 tangent and must be above the surface of the water in the tank.
22 A wearing plate of steel of the same thickness as the shell must
23 be attached to the inside of the shell opposite the inlet
24 opening.

25 Subp. 6. **Vent pipe.** The vent pipe must be connected to
26 the uppermost part of the tank and carried without any
27 intervening stop valve or other obstruction as direct as
28 possible to the outside atmosphere. It must discharge at a
29 point of safety not less than seven feet above adjacent areas or
30 walkways.

31 Subp. 7. **Access opening.** The tank must have a suitable
32 access opening, a manhole if possible; if not possible, then
33 handholes, for inspection and cleaning of the interior. All
34 pipe connections must be made as direct as possible and must be
35 equipped, where possible, with sweep bends having a radius of at
36 least four times the diameter of the pipe. Where conditions

1 make the use of sweep bends prohibitive, long sweep fittings may
2 be used. If couplings are welded in the openings they must be
3 extra heavy.

4 Subp. 8. Drain. The tank must be fitted with a drain
5 connection which is at least 2-1/2 inch standard pipe size and
6 with a cold water supply which is at least three-fourths inch
7 pipe size. The drain line must contain fittings to facilitate
8 cleaning.

9 Subp. 9. Clearance from floor or ground. The tank must be
10 provided with supporting legs which shall give a distance of at
11 least 12 inches from the bottom of the tank to the floor.
12 Blowoff tanks placed under ground shall be installed in a
13 properly walled pit having space of not less than 18 inches
14 between the tank and the wall.

15 Subp. 10. Pressure gage. The tank must be fitted with a
16 pressure gage graduated from 0 to 30 pounds, the minor
17 graduations indicating a pressure not greater than one pound.
18 The pressure gage must be connected to a siphon, the opening of
19 which shall be at least one-fourth inch inside diameter.

20 Subp. 11. Water gage glass. The tank must be fitted with
21 a water gage glass of at least one-half inch diameter. The
22 lower connection to the glass shall be made at a point about
23 four inches below the water line and the upper connection about
24 six inches above the water line.

25 Subp. 12. Thermometer well. The tank must be fitted with
26 an opening for a thermometer well, located close to the water
27 outlet connection and in contact with the water in the tank. If
28 the outlet is not fitted with a water cooling device, the
29 retained water must be reduced to at least room temperature
30 before blowing down a boiler.

31 Subp. 13. Permissible types of tanks. Blowdown
32 centrifugal separator, closed, and other types of blowoff tanks
33 are permissible when approved by the chief boiler inspector.

34 5225.3500 TABLE NO. 1.

35
36 Boiler

	Blowoff Inlet	Water Outlet	Vent
1			
2			
3	* 3/4	3/4	2
4	1	1	2-1/2
5	1-1/4	1-1/4	3
6	1-1/2	1-1/2	4
7	2	2	5
8	2-1/2	2-1/2	6
9			

10 To be used only with boilers of 100 square feet of heating
 11 surface or less.

12 5225.4000 BLOWOFF TANKS.

13 Sizes of blowoff tanks are given in the following table:

14 Up to three boiler horsepower pipes not to exceed 18 inches
 15 in diameter may be used, provided the volume of the water seal
 16 is at least equal to one gauge of water of the boiler to which
 17 it is connected and vapor space is at least 50 percent of the
 18 volume and boiler pressure is not over 100 pounds per square
 19 inch.

	Boiler Rating	Tank Size
20		
21		
22	3 to 10 H.P.	24" x 36"
23	11 to 25 H.P.	24" x 48"
24	26 to 50 H.P.	30" x 36"
25	51 to 75 H.P.	30" x 48"
26	76 to 150 H.P.	36" x 54"
27	151 to 250 H.P.	36" x 60"
28	251 to 600 H.P.	42" x 66"
29	Over 600 H.P.	48" x 72"

30 5225.4100 SAFETY VALVES.

31 Every high pressure or low pressure boiler must have at
 32 least one safety valve. A high pressure boiler of more than 500
 33 square feet of water heating surface must have two or more
 34 safety valves. Safety valves must meet American Society of
 35 Mechanical Engineers Boiler and Pressure Vessel Code
 36 requirements and be so stamped.

37 Every safety valve must be connected to the boiler
 38 independent of any other connections, and attached as close as
 39 possible to the boiler, without any unnecessary pipe or fitting
 40 and must stand in an upright position. No valve of any
 41 description may be placed between the required safety valve or
 42 valves and the boiler, nor on the discharge pipe between the
 43 safety valve and the atmosphere. All safety valves must
 44 discharge at a point of safety not less than seven feet from

1 running boards, platforms, or adjacent areas. No reduction in
2 pipe size is allowed in discharge piping from a safety valve.

3 5225.4200 WATER GAGE.

4 When the boiler operating pressure exceeds 100 pounds per
5 square inch, the watergauge glass must be fitted with a gate or
6 plug-valved drain to a safe discharge point.

7 The lowest visible part of the water gage glass must be at
8 least two inches above the lowest permissible water level. If
9 the lowest water gage shutoff valve is more than seven feet
10 above the floor or platform from which it is operated, the
11 operating mechanism must indicate by its position whether the
12 valve is opened or closed.

13 5225.4300 WATER COLUMN SHUTOFFS.

14 When shutoffs are used in pipe connections between a boiler
15 and water column or between a boiler and the shutoff valves
16 required for the gage glass they must be either
17 outside-screw-and-yoke or leverlifting type gate valves or
18 stopcocks with levers permanently fastened and marked in line
19 with their passage, or other through-flow construction to
20 prevent stoppage by deposits of sediment. These valves must
21 indicate by the position of the operating mechanism whether they
22 are in open or closed position; and the valves or cocks shall be
23 locked or sealed open. Where stopcocks are used they must be a
24 type with the plug held in place by a guard or gland.

25 Apparatus which does not permit the escape of an
26 appreciable amount of steam may be placed in the pipes
27 connecting a water column or gage glass to a boiler.

28 The steam and water connections to a water column,
29 including all pipe, fittings, valves, and drains must be readily
30 accessible for internal inspection and cleaning by providing a
31 cross or fitting with a back outlet at each right-angle turn, or
32 by using pipe bends or fittings which will permit the passage of
33 a rotary cleaner. The water column shall be fitted with at
34 least a three-fourths inch pipe size cock or drain with a
35 suitable connection to a safe discharge point.

1 5225.4400 STEAM GAGE.

2 Each steam gage must be connected to a siphon of at least
3 one-fourth inch pipe size and be fitted with a cock provided
4 with a tee or lever handle arranged to be parallel to the pipe
5 in which it is located when the cock is open. If the pipe is
6 longer than ten feet, a shutoff valve or cock arranged so that
7 it can be locked or sealed open may be used near the boiler.

8 The dial of the steam gage must be graduated to
9 approximately double the pressure at which the safety valve is
10 set but in no case to less than 1-1/2 times this pressure.

11 5225.4500 VALVES AND FITTINGS.

12 Valves and pipe fittings must conform to the American
13 National Standards Institute for the maximum allowable working
14 pressure. Fusion welded joints are permitted if the welding
15 procedure and operator are qualified.

16 All valves and fittings on all feedwater piping from the
17 boiler up to and including the first stop valve and the check
18 valve must be equal at least to the requirements of the standard
19 accepted by the American Society of Mechanical Engineers Boiler
20 and Pressure Vessel code for pressure 1.25 times the maximum
21 allowable working pressure of the boiler.

22 All valves and fittings for feed-water piping between the
23 required check valve and the globe or regulating valve, and
24 including any bypass piping up to and including the shutoff
25 valves in the bypass, must be equal at least to the saturated
26 requirements of any standard accepted by the American Society of
27 Mechanical Engineers Boiler and Pressure Vessel code. The
28 pressure rating must be equal to the expected operating pressure
29 required to feed the boiler for a saturated steam temperature
30 corresponding to the minimum set pressure of any safety valve on
31 the boiler drum or the actual temperature of the water,
32 whichever is greater.

33 Valves and fittings made of any material permitted by the
34 American Society of Mechanical Engineers Boiler and Pressure
35 Vessel code for pressure ratings of 125 pounds or more and

1 marked as required by the code may be used for feed line and
2 blowoff service up to 80 percent of the rated pressure.

3 5225.4600 STOP VALVES.

4 Each steam-discharge outlet, except safety-valve, reheater
5 inlet and outlet, or superheater inlet connections, must be
6 fitted with a stop valve located at an accessible point in the
7 steam-delivery line and as near to the boiler nozzle as
8 convenient and practicable. When the outlets are over two
9 inches pipe size, the valve or valves used on the connection
10 must be the outside-screw-and-yoke rising-spindle type to
11 indicate at a distance by the position of its spindle whether it
12 is closed or open. A plug-cock-type valve may be used provided
13 the plug is held in place by a guard or gland, and it is
14 equipped to indicate at a distance whether it is closed or open
15 and it is equipped with a slow-opening mechanism.

16 5225.4700 COMMON MAIN CONNECTION.

17 When two or more boilers are connected to a common steam
18 main, the steam connection from each boiler having a manhole
19 opening must be fitted with two stop valves having an ample
20 free-blow drain between them. The stop valves must consist
21 preferably of one automatic nonreturn valve, set next to the
22 boiler and a second valve of the outside-screw-and-yoke type; or
23 as an alternative, two valves of the outside-screw-and-yoke type
24 must be used.

25 5225.4800 BLOWOFF PIPING.

26 Each boiler must have a bottom blowoff pipe fitted with a
27 valve or cock in direct connection with the lowest water space
28 practicable.

29 All fittings between the boiler and valves must be of steel
30 for pressure over 100 pounds per square inch. For pressures up
31 to 200 pounds per square inch cast iron valves may be used if
32 they meet the requirements of the American Standard for 250
33 pounds; and if of steel must be equal to the requirements of the
34 American Standards as given in the American Society of

1 Mechanical Engineers Boiler and Pressure Vessel code. For
2 pressures over 200 pounds per square inch the valves or cocks
3 must be of steel and at least equal to the American Society of
4 Mechanical Engineers Boiler and Pressure Vessel code standard.

5 5225.4900 BLOWOFF VALVES.

6 On all stationary boilers, when the allowable working
7 pressure exceeds 100 pounds per square inch, each bottom blowoff
8 pipe must have two slow-opening valves, or one slow-opening
9 valve and a quick-opening valve or a cock complying with the
10 American Society of Mechanical Engineers Boiler and Pressure
11 Vessel code requirement.

12 The bottom blowoff pipes of every traction and/or portable
13 boiler must have at least one slow-or-quick-opening blowoff
14 valve or cock conforming to the American Society of Mechanical
15 Engineers Boiler and Pressure Vessel code requirement.

16 Blowoff valves and cocks must be located in a convenient
17 and accessible place, using extension valve stems if necessary
18 to secure safe operation.

19 5225.5000 FEED PIPING.

20 The feed-pipe must be provided with a check valve near the
21 boiler and a valve or cock between the check valve and the
22 boiler, and when two or more boilers are fed from a common
23 source, there must be a globe or regulating valve on the branch
24 to each boiler between the check valve and the source of
25 supply. Wherever globe valves are used on feed piping, the
26 inlet must be under the disk.

27 A combination stop-and-check valve in which there is only
28 one seat and disk, and a valve stem is provided to close the
29 valve when the stem is screwed down, must be considered only as
30 a stop valve, and a check valve must be installed as provided in
31 the first paragraph of this part.

32 5225.5100 FEEDWATER SUPPLY.

33 A high pressure boiler having more than 500 square feet of
34 water heating surface (50 BHP) must have at least two means of

1 feeding. Each source of feeding must be capable of supplying
2 water to the boiler at a pressure of three percent higher than
3 the highest setting of any safety valve on the boiler. For
4 boilers that are fired with solid fuel not in suspension, and
5 for boilers whose setting or heat source can continue to supply
6 sufficient heat to cause damage to the boiler if the feed supply
7 is interrupted, one such means of feeding must not be
8 susceptible to the same interruption as the other, and each must
9 provide sufficient water to prevent damage to the boiler.

10 When electrically-driven feed pumps are used and there is
11 no other reliable independent source of electrical supply, there
12 must be maintained ready for service steam-driven feed pumps or
13 injectors (inspirators) of sufficient capacity to safeguard the
14 boilers in case of failure of electric power.

15 5225.5200 ELECTRICALLY HEATED GENERATORS.

16 All appliances required for electric steam generators shall
17 be attached in accordance with the following:

18 A cable at least as large as one of the incoming power
19 lines to the generator must be provided for grounding the
20 generator shell. This cable must be permanently fastened on
21 some part of the generator and must be grounded in an approved
22 manner. A suitable screen or guard shall be provided around
23 high tension bushings and a sign posted warning of high
24 voltage. This screen or guard must be located so that it will
25 be impossible for anyone working around the generator to
26 accidentally come in contact with the high tension circuits.

27 Each kilowatt of electrical energy consumed by an electric
28 steam generator, operating at maximum rating, must be considered
29 the equivalent of one square foot of heating surface of a fire
30 tube boiler when determining the required amount of safety valve
31 relieving capacity.

32 5225.9000 TRACTION ENGINE ATTENDANCE REQUIREMENTS.

33 A traction engine (hobby boiler) may not be left unattended
34 when in operation and members of the public are present. For
35 purposes of this part, a traction engine may be considered as

1 not being in operation when all of the following conditions
2 exist:

3 A. the water level is at least one-third of the water
4 gage glass;

5 B. the header or dome valve is in a closed position;

6 C. the draft doors are closed;

7 D. the fire is banked or extinguished; and

8 E. the boiler pressure is at least 20 pounds per
9 square inch below the safety valve relieving pressure.

10

11 REPEALER. Minnesota Rules, parts 5225.0800; 5225.2000;
12 5225.2500, subparts 1 and 2; and 5225.2800; are repealed.