

CHAPTER 90
ADMINISTRATION OF THE BOILER AND PRESSURE VESSEL PROGRAM

[Prior to 1/14/98, see 347—Chs 41 to 49]

[Prior to 8/16/06, see 875—Chs 200, 202]

875—90.1(89) Purpose. These rules institute administrative and operational procedures for implementation of Iowa Code chapter 89.

875—90.2(89,261,252J) Definitions. To the extent they do not conflict with the definitions contained in Iowa Code chapter 89, the definitions in this rule shall be applicable to the rules contained in 875—Chapters 90 to 96.

“*Alteration*” means a change in a boiler or pressure vessel that substantially alters the original design requiring consideration of the effect of the change on the original design. It is not intended that the addition of nozzles smaller than an unreinforced opening size will be considered an alteration.

“*ANSI/ASME CSD-1*” means Control and Safety Devices for Automatically Fired Boilers.

“*ASME*” means the American Society of Mechanical Engineers.

“*Authorized inspector*” means a special inspector or an inspector of boilers and pressure vessels employed by the division.

“*Blowoff valve*” means all blowoff valves, drain valves, and pipe connections.

“*Boiler*” means a vessel in which water or other liquids are heated, steam or other vapors are generated, steam or other vapors are superheated, or any combination thereof, under pressure or vacuum by the direct application of heat. “Boiler” includes all temporary boilers.

“*BSI*” means British Standards Institute.

“*Certificate of noncompliance*” means a certificate of noncompliance with child support payment obligations issued by the child support recovery unit, department of human services, pursuant to Iowa Code chapter 252J or a certificate of noncompliance with student loan repayment obligations issued by the college student aid commission pursuant to Iowa Code chapter 261.

“*CFR*” means Code of Federal Regulations.

“*Construction or installation code*” means the applicable recognized national or international standard for construction or installation in effect at the time of installation such as ASME, DIN, BSI, JIS or CSA.

“*CSA*” means the Canadian Standards Association, CSA B51, Boiler Pressure Vessel, and Pressure Piping Code.

“*DIN*” means German Institute of Standards.

“*Division*” means the division of labor services, unless another meaning is clear from the context.

“*Electric boilers*” means a power boiler, heating boiler, high or low temperature water boiler in which the source of heat is electricity.

“*External inspection*” means as complete an examination as can be reasonably made of the external surfaces and safety devices while the boiler or pressure vessel is in operation.

“*High temperature water boiler*” means a water boiler intended for operations at pressures in excess of 160 psig or temperatures in excess of 250 degrees F.

“*Hot water heating boiler*” means a boiler in which no steam is generated, from which hot water is circulated for heating purposes and then returned to the boiler, and which operates at a pressure not exceeding 160 psig or a temperature of 250 degrees F at the boiler outlet.

“*Hot water supply boiler*” means a boiler completely filled with water that furnishes hot water to be used externally to itself at pressures not exceeding 160 psig or at temperatures not exceeding 250 degrees F.

“*Internal inspection*” means as complete an examination as can be reasonably made of the internal and external surfaces of a boiler or pressure vessel while it is shut down and while manhole plates, handhole plates or other inspection opening closures are removed as required by the inspector.

“*ISO*” means International Standards Organization.

“*JIS*” means Japanese Industrial Standards.

“*Labor commissioner*” means the labor commissioner or the commissioner’s designee.

“*Lap seam crack*” means a crack found in lap seams, extending parallel to the longitudinal joint and located either between or adjacent to rivet holes.

“*National Board*” means the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229, whose membership is composed of the chief inspectors of jurisdictions who are charged with the enforcement of the provisions of local boiler codes.

“*National Board Inspection Code*” means the Manual for Boiler and Pressure Vessel Inspectors (ANSI/NB 23) published by the National Board. Copies of the code may be obtained from the National Board.

“*Object*” means a boiler or pressure vessel.

“*Pressure vessel*” means a vessel in which pressure is obtained from an external source, or by the application of heat from an indirect or direct source.

“*Process steam generator*” means a vessel or system of vessels comprised of one or more drums and one or more heat exchange surfaces as used in waste heat or heat recovery type steam boilers.

“*Psig*” means pounds per square inch gage.

“*Reinstalled boiler or pressure vessel*” means an object removed from its original setting and reinstalled at the same location or at a new location.

“*Relief valve*” means an automatic pressure-relieving device actuated by a static pressure upstream of the valve that opens further with the increase in pressure over the opening pressure and that is used primarily for liquid service.

“*Repair*” means work necessary to return a boiler or pressure vessel to a safe operating condition.

“*Rupture disk device*” means a nonreclosing pressure-relief device actuated by inlet static pressure and designed to function by the bursting of a pressure-containing disk.

“*Safety appliance*” shall include, but not be limited to:

1. Rupture disk device;
2. Safety relief valve;
3. Safety valve;
4. Temperature limit control;
5. Pressure limit control;
6. Gas switch;
7. Air switch; or
8. Any major gas train control.

“*Safety relief valve*” means an automatic, pressure-actuated relieving device suitable for use as a safety or relief valve, depending on application.

“*Safety valve*” means an automatic, pressure-relieving device actuated by the static pressure upstream of the valve and characterized by full opening pop action. The safety valve is used for gas or vapor service.

“*Special inspection*” means an inspection which is not required by Iowa Code chapter 89.

“*Temperature and pressure relief valve*” means a valve set to relieve at a designated temperature and pressure.

“*Unfired steam boiler*” means a vessel or system of vessels intended for operation at a pressure in excess of 15 psig for the purpose of producing and controlling an output of thermal energy.

“*U.S. customary units*” means feet, pounds, inches and degrees Fahrenheit.

“*Water heater supply boiler*” means a closed vessel in which water is heated by combustion of fuels, electricity or any other source and withdrawn for use external to the system at pressure not exceeding 160 psig and shall include all controls and devices necessary to prevent water temperatures from exceeding 210 degrees F.

875—90.3(89) Iowa identification numbers. All objects shall be identified by an Iowa identification number. State inspectors and special inspectors shall assign identification numbers as directed by the division to all jurisdictional objects that lack numbers. Identification numbers shall be attached in plain view to the object using one of the following methods:

1. A yellow sticker 2 inches by 3 inches affixed to the object and bearing the number.

2. A metal tag 1 inch by 2½ inches affixed to the object and bearing the number.
3. Numbers at least 5/16 of an inch high and stamped directly on the object.

875—90.4(89) National Board registration. Except for cast iron boilers, cast aluminum boilers, and objects governed by 875—Chapter 95, all objects must be registered with the National Board.

875—90.5(89) Preinspection owner or user preparation.

90.5(1) Preparation of objects. Each owner or user shall ensure that each object covered by Iowa Code chapter 89 is prepared for inspection pursuant to this rule.

90.5(2) Confined space and lockout, tagout procedures.

a. It is the responsibility of the owner or user to assess all objects for compliance with the confined space and lockout, tagout standards pursuant to 29 CFR 1910.146 and 1910.147. If an object is a non-permit-required confined space or a permit-required confined space as defined by 29 CFR 1910.146, the owner or user must comply with all applicable requirements of 29 CFR 1910.146 and 1910.147 in preparing the object for inspection.

b. It is the duty of the owner or user to inform any inspector of the owner's or user's confined space entry and lockout, tagout procedures and supply to the inspector all information necessary to assess whether the confined space is safe for entry. It is the right of an inspector to verify any of the information supplied.

c. If the requirements of 29 CFR 1910.146 and 1910.147 are not met, the inspector shall not enter the space. If there is a breach of the procedure or the procedure is inconsistent with 29 CFR 1910.146 or 1910.147, the inspection process shall cease until the space is reassessed and determined to be safe or the procedure is rewritten in a manner consistent with the standards. No inspector shall violate the owner's or user's confined space or lockout, tagout procedures in making an inspection.

d. The owner or user shall have all objects locked and tagged, as applicable, prior to the inspector's entry for inspection or testing.

e. For entry into a permit-required confined space, the owner or user shall provide the necessary equipment such as air monitors and a qualified attendant who has received all the information relevant to the entry.

90.5(3) Hydrostatic tests. The owner or user shall prepare for and apply a hydrostatic test, whenever necessary, on the date specified by the inspector, which date shall be not less than seven days after the date of notification.

90.5(4) Boilers. A boiler shall be prepared for internal inspection in the following manner:

a. Water shall be drawn off and the boiler washed thoroughly.

b. Manhole and handhole plates, washout plugs and inspection plugs in water columns shall be removed as required by the inspector. The furnace and combustion chambers shall be thoroughly cooled and cleaned.

c. All grates of internally fired boilers shall be removed.

d. Brickwork shall be removed as required by the inspector in order to determine the condition of the boiler, header, furnace, supports or other parts.

e. Low-water fuel cutoff controls shall be opened or removed to allow for visual inspection.

90.5(5) Pressure vessels. The extent of inspection preparation for a pressure vessel will vary. If the inspection is to be external only, advance preparation is not required other than to afford reasonable access to the vessel. For combined internal and external inspections of small vessels of simple construction handling air, steam, nontoxic or nonexplosive gases or vapors, minor preparation is required, including affording reasonable means of access and removing manhole plates and inspection openings. In other cases, preparation shall include removing the internal fittings and appurtenances to permit satisfactory inspection of the interior of the vessel if required by the inspector.

90.5(6) Removal of covering or brickwork to permit inspection. If the object is jacketed so that the longitudinal seams of shells, drums, or domes cannot be seen, sufficient jacketing, setting wall, or other form of casing or housing shall be removed to permit reasonable inspection of the seams and so that the size of rivets, pitch of the rivets, and other data necessary to determine the safety of the object may be

obtained, providing the information cannot be determined by other means. Brickwork shall be removed as required by the inspector in order to determine the condition of the boiler, header, furnace, supports or other parts.

90.5(7) *Improper preparation for inspection.* If an object has not been properly prepared for an internal inspection, or if the owner or user fails to comply with the requirements for hydrostatic tests as set forth in this chapter, the inspector may decline to make the inspection or test, and the inspection certificate shall be withheld until the owner or user complies with the requirements.

875—90.6(89) Inspections.

90.6(1) *General.* All boilers and pressure vessels covered by Iowa Code chapter 89 shall be inspected according to the requirements of the National Board Inspection Code (2004), which is hereby adopted by reference. A division inspector or special inspector must perform the inspections.

90.6(2) *Schedule.* Inspections must be performed according to the schedule set forth in Iowa Code section 89.3 and within a 60-day period prior to the expiration date of the operating certificate. Modification of this period will be permitted only upon written application showing just cause for waiver of the 60-day period. Special inspections may be conducted at any time mutually agreed to by the division and the object's owner or user.

90.6(3) *Inspections conducted by special inspectors.* Special inspectors shall provide copies of the completed report to the insured and to the division within 30 days of the inspection. The reports shall list all adverse conditions and all requirements, if any. If the special inspector has not notified the division of the inspection results within 30 days of the expiration of an operating certificate, the division may conduct the inspection.

90.6(4) *Type of inspection.* The inspection shall be an internal inspection when required; otherwise, it shall be as complete an external inspection as possible. Conditions including, but not limited to, the following may also be the basis for an internal inspection:

- a. Visible metal or insulation discoloration due to excessive heat.
- b. Visible distortion of any part of the pressure vessel.
- c. Visible leakage from any pressure-containing boundary.
- d. Any operating records or verbal reports of a vessel being subjected to pressure above the nameplate rating or to a temperature above or below the nameplate design temperature.
- e. A suspected or known history of internal corrosion or erosion.
- f. Evidence or knowledge of a vessel having been subjected to external heat from a resulting fire.
- g. A welded repair not documented as required.
- h. Personal injury, property damage accident, or malfunction affecting the pressure vessel's integrity.

90.6(5) *Internal inspections for unfired steam pressure vessels operating at more than 15 pounds per square inch.* The commissioner may require an internal inspection of an unfired steam pressure vessel operating in excess of 15 psi when an inspector observes any deviation from these rules, Iowa Code chapter 89, the construction code, the installation code, or the National Board Inspection Code.

90.6(6) *Inspection of inaccessible parts.* When, in the opinion of the inspector, as a result of conditions disclosed at the time of inspection, it is advisable to remove the interior or exterior lining, covering, or brickwork to expose certain parts of the vessel not normally visible, the owner or user shall remove such material to permit proper inspection and thickness measurement of any part of the vessel. Nondestructive examination is acceptable.

90.6(7) *Imminent danger.* If the labor commissioner determines that continued operation of an object constitutes an imminent danger that could seriously injure or cause death to any person, notice to immediately cease operation of that object shall be posted by the labor commissioner. Upon such notice, the owner shall immediately begin the necessary steps to cease operation of the object. The object shall not be used until the necessary repairs have been completed and the object has passed inspection. Operation of an object in violation of this subrule may result in further legal action pursuant to Iowa Code section 89.11 as amended by 2007 Iowa Acts, House File 368, section 7, and Iowa Code section 89.14 as amended by 2007 Iowa Acts, House File 368, section 8.

875—90.7(89) Fees.

90.7(1) *Special inspector certification fee.* A \$40 fee shall be paid annually to the commissioner to obtain a special inspector certification pursuant to Iowa Code section 89.7, subsection 1.

90.7(2) *Certificate fee.* A \$25 fee shall be paid for each one-year certificate and a \$50 fee shall be paid for each two-year certificate.

90.7(3) *Fees for inspection.* An inspection fee for each object inspected by a division inspector shall be paid by the appropriate party as follows:

a. A \$40 fee for each water heater supply boiler.

b. An \$80 fee for each boiler, other than a water heater supply boiler, having a working pressure up to and including 450 pounds per square inch or generating between 20,000 and 100,000 pounds of steam per hour.

c. A \$200 fee for each boiler, other than a water heater supply boiler, having a working pressure in excess of 450 pounds per square inch and generating in excess of 100,000 pounds of steam per hour.

d. A \$40 fee for each pressure vessel, such as steam stills, tanks, jacket kettles, sterilizers and all other reservoirs having a working pressure of 15 pounds or more per square inch.

e. In addition to the applicable object's inspection fee, if the division cannot follow normal practice of scheduling inspections in a cost-effective manner due to a request by an owner or user for a customized schedule, travel expenses may be charged at the discretion of the division.

f. Inspections and code qualification surveys made by the commissioner at the request of a boiler or tank manufacturer shall be charged at a rate set by the commissioner not to exceed the rate currently charged by the various insurance companies for performing a similar service. This charge shall not void the regular fee for inspection or certification when the boiler or tank is installed.

g. If a boiler or pressure vessel has to be reinspected through no fault of the division, there shall be another inspection fee as specified above. However, there shall be no fee charged for the first scheduled reinspection to verify that ordered repairs have been made.

90.7(4) *Fees for attempted inspections.* A \$20 fee shall be charged for each attempt by a division inspector to conduct an inspection which is not completed through no fault of the division.

875—90.8(89) Certificate. A certificate to operate shall not be issued until the boiler or pressure vessel is in compliance with the applicable rules and all fees have been paid. The current certificate to operate or a copy of the current certificate to operate shall be conspicuously posted in the room where the object is installed.

875—90.9(89,252J,261) Special inspector commissions.

90.9(1) *Application.* A person applying for a commission shall complete, sign, and submit to the division with the required fee the form entitled "Application for Boiler and Pressure Vessel Special Inspector Commission" provided by the division. Additionally, the applicant shall submit a copy of the applicant's current National Board work card with each application.

90.9(2) *Expiration.* The commission is for no more than one year and ceases when the special inspector leaves employment with the insurance company, or when the commission is suspended or revoked by the labor commissioner. Each commission shall expire no later than June 30 of each year.

90.9(3) *Changes.* The special inspector shall notify the division at the time any of the information on the form or attachments changes.

90.9(4) *Denials.* The labor commissioner may refuse to issue or renew a special inspector's commission for failure to complete an application package, if the applicant or inspector does not hold a National Board commission, or for any reason listed in subrules 90.9(6) to 90.9(8).

90.9(5) *Investigations.* Investigations shall take place at the time and in the places the labor commissioner directs. The labor commissioner may investigate for any reasonable cause. The labor commissioner may conduct interviews and utilize other reasonable investigatory techniques. Investigations may be conducted without prior notice.

90.9(6) *Reasons for probation.* The labor commissioner may issue a notice of commission probation when an investigation reasonably reveals that the special inspector filed inaccurate reports.

90.9(7) *Reasons for suspension.* The labor commissioner may issue a notice of commission suspension when an investigation reasonably reveals the following:

- a. The special inspector failed to submit and report inspections on a timely basis;
- b. The special inspector abused the special inspector's authority;
- c. The special inspector misrepresented self as a state inspector or a state employee;
- d. The special inspector used commission authority for inappropriate personal gain;
- e. The special inspector failed to follow the division's rules for inspection of object repairs, alterations, construction, installation, or in-service inspection;
- f. The special inspector committed numerous violations as described in subrule 90.9(6);
- g. The special inspector used fraud or deception to obtain or retain, or to attempt to obtain or retain, a special inspector commission whether for one's self or another;
- h. The National Board revoked or suspended the special inspector's work card;
- i. The division received a certificate of noncompliance; or
- j. The special inspector failed to take appropriate disciplinary actions against a subordinate special inspector who has committed repeated acts or omissions listed in paragraphs "a" to "h" of this subrule.

90.9(8) *Reasons for revocation.* The labor commissioner may issue a notice of revocation of a special inspector's commission when an investigation reveals any of the following:

- a. The special inspector filed a misleading, false or fraudulent report;
- b. The special inspector failed to perform a required inspection;
- c. The special inspector failed to file a report or filed a report which was not in accordance with the provisions of applicable standards;
- d. The special inspector failed to notify the division in writing of any accident involving an object;
- e. The special inspector committed repeated violations as described in subrule 90.9(7);
- f. The special inspector used fraud or deception to obtain or retain, or to attempt to obtain or retain, a special inspector commission whether for one's self or another;
- g. The special inspector instructed, ordered, or otherwise encouraged a subordinate special inspector to perform the acts or omissions listed in paragraphs "a" to "f" of this subrule;
- h. The National Board revoked or suspended the special inspector's work card; or
- i. The division received a certificate of noncompliance.

90.9(9) *Procedures.* The following procedures shall apply except in the event of revocation or suspension due to receipt of a certificate of noncompliance. In instances involving receipt of a certificate of noncompliance, the applicable procedures of Iowa Code chapter 252J or 261 shall apply.

a. *Notice of actions.* The labor commissioner shall serve a notice on the special inspector by certified mail to an address listed on the commission application form or by other service as permitted by Iowa Code chapter 17A. A copy shall be sent to the insurance company employing the special inspector.

b. *Contested cases.* The special inspector shall have 20 days to file a written notice of contest with the labor commissioner. If the special inspector does not file a written contest within 20 days of receipt of the notice, the action stated in the notice shall automatically be effective.

c. *Hearing procedures.* The hearing procedures in 875—Chapter 1 shall govern.

d. *Emergency suspension.* Pursuant to Iowa Code section 17A.18A, if the labor commissioner finds that public health, safety or welfare imperatively requires emergency action because a special inspector failed to comply with applicable laws or rules, the special inspector's commission may be summarily suspended.

e. *Probation period.* A special inspector may be placed on probation for a period not to exceed one year for each incident causing probation.

f. *Suspension period.* A special inspector's commission may be suspended up to five years for each incident causing a suspension.

g. *Revocation period.* A special inspector's commission that has been revoked shall not be reinstated for five years.

h. *Concurrent actions.* Multiple actions may proceed at the same time against any special inspector.

i. Revoked or suspended commissions. Within five business days of final agency action revoking or suspending a special inspector commission, the special inspector shall forfeit the special inspector's commission card to the labor commissioner.

875—90.10(89) Quality reviews, surveys and audits.

90.10(1) An entity that manufactures or repairs boilers, pressure vessels or related equipment may request quality reviews, surveys or audits from certifying organizations such as the ASME or the National Board. The division is authorized to conduct the quality reviews, surveys or audits. If the division performs the service, the manufacturer or repairer shall pay all applicable expenses.

90.10(2) Quality reviews, surveys and audits for certification to the National Board or ASME standards shall be conducted only by a person or organization designated by the labor commissioner. Any person or organization seeking this designation on behalf of the division shall provide documented evidence of training, examination, experience, and certification for the type of reviews, surveys and audits to be performed. The labor commissioner shall have final authority to determine qualifications and designations.

a. Assessing quality programs. The division recognizes the ASME and the National Board as qualified designees for conducting quality reviews, surveys and audits that lead to ASME or National Board program certification.

b. ISO 9000 assessments. The division recognizes the ASME and the National Board:

(1) To be acceptable ISO 9000 registrars of quality systems for boilers and pressure vessels and the related pressure-technology equipment industry;

(2) To certify auditors and lead auditors to the requirements of ISO 10011-2 1991(E), Annex A; and

(3) To conduct ISO 9000 assessments for the boiler, pressure vessel, and related pressure-technology equipment industry.

875—90.11(89) Notification of explosion. Owners and users of covered objects must report any object explosion by calling (515)281-3647 or (515)281-6533. If the explosion occurs during normal division operating hours, notification shall occur before close of business on that day. If the explosion occurs when the division office is closed, the notification shall occur no later than close of business on the next division business day. Division hours are 8 a.m. to 4:30 p.m., Monday through Friday, except state holidays.

875—90.12(89) Publications available for review. Pursuant to Iowa Code section 89.5, subsection 3, the standards, codes, and publications adopted by reference in these rules are available for review in the office of the Division of Labor Services, 1000 East Grand Avenue, Des Moines, Iowa.

875—90.13(89) Notice prior to installation. Written notice of intent to install objects subject to the jurisdiction of Iowa Code chapter 89 shall be provided to the labor commissioner at least ten days before installation. Written notice shall be accomplished by completing and submitting to the labor commissioner either:

1. The form designated by the labor commissioner, or
2. The National Board's Boiler Installation Report, I-1.

875—90.14(89) Temporary boilers. A certificate to operate a temporary boiler shall expire one year from the date of issuance or when the temporary boiler is disconnected. Inspections on temporary boilers that remain in one location longer than one year shall be performed according to the inspection schedule of Iowa Code section 89.3. A temporary boiler that is installed at a different location less than a year since the prior internal inspection of the boiler shall be subjected to a hydrostatic test pursuant to the National Board Inspection Code or to an internal inspection, at the discretion of the inspector.

These rules are intended to implement Iowa Code chapters 17A, 89, 252J, and 261.

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[◇] Two or more ARCs

¹ Date corrected IAC Supp. 3/26/08