

## **SECOND NOTICE OF PROPOSED RULEMAKING**

- 1) AGENCY: Illinois Emergency Management Agency and Office of Homeland Security
- 2) TITLE OF RULE: Safe Operation of Nuclear Facility Boilers and Pressure Vessels
- 3) CODE CITATION: 32 Ill. Adm. Code 505
- 4) DATE NOTICE PUBLISHED IN ILLINOIS REGISTER: 49 Ill. Reg. 5647; April 25, 2025
- 5) TEXT AND LOCATION OF ANY CHANGES MADE IN THE RULE DURING THE FIRST NOTICE PERIOD:
  1. Lines 346, 420 & 432, change "2023" to "2025"
  2. Line 370, delete "Transportation and Storage of" and add "and Transport Packaging's" after "Systems"
  3. Line 400, add "of" back in after "Service"
  4. Line 423, change "2021" to "2024"
  5. Line 438, add "1035 Outer Park Drive, Springfield, Illinois" back in after "offices"
- 6) RESPONSE TO RECOMMENDATIONS FROM THE ADMINISTRATIVE CODE DIVISION: The Administrative Code Division found this Part to be in compliance with codification system requirements.
- 7) DOES THIS RULEMAKING INCLUDE ANY INCORPORATION BY REFERENCE PURSUANT TO SECTION 5-75 OF THE ILLINOIS ADMINISTRATIVE PROCEDURE ACT? Yes, Section 505.40 adopts the following codes by reference:

American Society of Mechanical Boiler and Pressure Vessel Code, 1952 Edition including all addenda and editions through the 2025 edition;

The National Board Inspection Code, 2025 edition;

American Society of Mechanical Engineers code CSD-1, 2024 edition, entitled Controls and Safety Devices for Automatically Fired Boilers;

NFPA 85, 20232019 edition, Boiler and Combustion Systems Hazards Code; and

American National Standards Institute/American Society of Mechanical Engineers N626, Qualification and Duties of Authorized Nuclear Inspection Agencies and Personnel, 1974 Edition including all addenda and editions through the N626b-1992 addendum. The

Agency also adopts the successor standard to this standard, ASME QAI-1, Qualification for Authorized Inspection, 1995 edition, including all addenda and editions through the 2025 edition.

- 8) FINAL REGULATORY FLEXIBILITY ANALYSIS:
  - a) A summary of the issues raised by small businesses during the first notice period: None
  - b) A description of actions taken on any alternative to the proposed rulemaking suggested by small businesses during the first notice period, including reasons for rejecting any alternatives not utilized: None
- 9) A STATEMENT OF THE METHODS USED BY THE AGENCY TO COMPLY WITH SECTION 5-30 OF THE ACT AND SECTION 220.285 OF THIS PART: There are no impacts to small businesses or other covered entities.
- 10) AGENCY'S EVALUATION OF THE COMMENTS PRESENTED TO THE AGENCY BY INTERESTED PERSONS DURING THE FIRST NOTICE PERIOD:
  - a) A list of all persons or organizations making comments on the proposed rulemaking: None
  - b) A list of specific criticisms, suggestions and comments raised by interested persons, and the Agency's analysis of each of these criticisms, suggestions and comments: None
  - c) Any changes made to the rules by the Agency as a result of the criticisms, suggestions, and comments made by interested persons: None
  - d) The names of all persons or organizations requesting a public hearing and the date of any public hearings held on the proposed rulemaking: None
- 11) JUSTIFICATION AND RATIONALE FOR THE PROPOSED RULEMAKING, INCLUDING:
  - a) Citations to changes in Illinois laws that require the rulemaking: None
  - b) Explanation of changes in Agency policies and procedures that require the rulemaking: None
  - c) Citations to federal laws, rules or regulations or to funding requirements that require the rulemaking: None
  - d) Citations and copies of court orders or decisions that require the rulemaking: None

e) A complete explanation of any other reasons for the proposed rulemaking: IEMA-OHS is proposing amendments to Part 505 to update incorporated referenced codes and to align with current industry standards. The amendments will also update the agency's name and contact information for standards boards.

12) NAME OF THE AGENCY REPRESENTATIVE WHO WILL RESPOND TO THE JOINT COMMITTEE'S QUESTIONS REGARDING THE PROPOSED RULEMAKING:

Douglas Dorando, Deputy Legal Counsel  
IEMA-OHS  
1035 Outer Park Drive  
Springfield, IL 62704  
217-622-4350

Also:

Louise Conway, General Counsel  
Luisa Torres, Resident Inspector Assistant  
Steven Reynolds, Acting Chief Nuclear Facility Safety

13) ANALYSIS OF ECONOMIC AND BUDGETARY EFFECTS: See attached

14) ANY NEW OR REVISED FORM REFERENCED IN RULEMAKING: None

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

**TITLE 32: ENERGY**  
**CHAPTER II: ILLINOIS EMERGENCY MANAGEMENT AGENCY AND**  
**OFFICE OF HOMELAND SECURITY**  
**SUBCHAPTER c: NUCLEAR FACILITY SAFETY**

**PART 505**  
**SAFE OPERATION OF NUCLEAR FACILITY BOILERS AND PRESSURE VESSELS**

**SUBPART A: GENERAL**

Section	
505.10	Scope
505.20	Policy
505.30	Definitions
505.40	Standards Incorporated by Reference
505.50	Exemptions
505.60	Access to Facilities and Documents
505.70	Notification of Failures
505.80	Administrative Review and Hearings – Inspection Certificates
505.82	Administrative Review and Hearings – Authorized Inspection Agency
505.84	Administrative Review and Hearings – Special Permits
505.86	Actions Pending Before the United States Nuclear Regulatory Commission
505.90	Address and Telephone Number for Notifications and Inquiries
505.100	Standards for Design, Construction, Operation and Inspection (general)
505.110	Registration Requirements (general)
505.120	Inspection Certificates (general)
505.130	Operation Requirements (general)
505.140	Inspection Requirements (general)
505.150	Repairs and Alterations (general)
505.160	Code Case Applications (general)
505.170	Use of Alternative Standards for Construction, Inspection and Repair (general)
505.180	Authorized Inspectors (general)
505.190	Authorized Inspection Agencies (general)

**SUBPART B: ISI BOILERS AND PRESSURE VESSELS**

Section	
505.1000	Standards for Design, Construction, Operation and Inspection
505.1100	Registration Requirements
505.1200	Inspection Certificates
505.1300	Operation Requirements
505.1400	Inspection Requirements

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

505.1500	Repairs
505.1600	Code Case Applications
505.1700	Use of Alternative Standards for Construction, Inspection and Repair
505.1800	Authorized Inspectors
505.1900	Authorized Inspection Agencies

**SUBPART C: NON-ISI BOILERS AND PRESSURE VESSELS**

**Section**

505.2000	Standards for Design, Construction, Operation and Inspection
505.2100	Registration Requirements
505.2200	Inspection Certificates
505.2300	Operation Requirements
505.2400	Inspection Requirements
505.2500	Repairs and Alterations
505.2600	Code Case Applications
505.2700	Use of Alternative Standards for Construction, Inspection and Repair
505.2800	Authorized Inspectors
505.2900	Authorized Inspection Agencies

**AUTHORITY:** Implementing and authorized by the Nuclear Safety Law of 2004 [20 ILCS 3310/25], Sections 2a and 2b of the Boiler and Pressure Vessel Safety Act [430 ILCS 75/2a and 2b] and Section 8(a)(8) of the Illinois Nuclear Safety Preparedness Act [420 ILCS 5/8(a)(8)].

**SOURCE:** Emergency Rule adopted at 17 Ill. Reg. 15667, effective September 10, 1993, for a maximum of 150 days; adopted at 18 Ill. Reg. 2317, effective February 7, 1994; amended at 20 Ill. Reg. 6455, effective April 26, 1996; amended at 23 Ill. Reg. 13089, effective October 6, 1999; recodified from the Department of Nuclear Safety to the Illinois Emergency Management Agency at 27 Ill. Reg. 13641; amended at 27 Ill. Reg. 15339, effective September 16, 2003; amended at 33 Ill. Reg. 4345, effective March 9, 2009; amended at 41 Ill. Reg. 645, effective January 4, 2017; amended at 45 Ill. Reg. 686, effective December 23, 2020; Chapter II recodified at 49 Ill. Reg. 3403; amended at 50 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

**SUBPART A: GENERAL**

**Section 505.30 Definitions**

The following definitions shall apply to this Part:

"Act" means the Boiler and Pressure Vessel Safety Act [430 ILCS 75].

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

**"Agency"** means the Illinois Emergency Management Agency and Office of Homeland Security.

**"Alteration"** means a change to a boiler or pressure vessel made necessary by, or resulting in, a change in design requirements. Non-physical changes such as rerating of a boiler or pressure vessel shall be considered an alteration. The addition of nozzles smaller than a reinforced opening size shall not be considered an alteration.

**"ANSI"** means the American National Standards Institute, 1180 Avenue of Americas, 10<sup>th</sup> Floor~~1430 Broadway, New York NY 10036~~0018.

**"Appurtenance"** means an item attached to a stamped component that has work performed on it requiring verification by an Authorized Inspector.

**"ASME"** means the American Society of Mechanical Engineers, Two Park Avenue~~345 E. 47<sup>th</sup> Street~~, New York NY 10016-5990~~0017~~.

**"ASME Code"** means the American Society of Mechanical Engineers Boiler and Pressure Vessel Code with addenda thereof made, approved and adopted by the Council of the Society and adopted and incorporated by the Agency in Section 505.40. Copies of the ASME Code may be obtained from the American Society of Mechanical Engineers.

**"ASME Code Case"** or **"Code Case"** means a document published by ASME to clarify the intent of the ASME Code or to provide alternative requirements to those specifically indicated in the ASME Code due to special circumstances or for the use of new technology.

**"Authorized Inspection Agency"** means one of the following organizations:

A department or division established by a jurisdiction that has adopted one or more Sections of the ASME Code and whose inspectors hold valid commissions issued by the National Board of Boiler and Pressure Vessel Inspectors. In Illinois, the Division of Boiler and Pressure Vessel Safety of the Office of the State Fire Marshal (OSFM) is the jurisdiction, except for the City of Chicago; or

An insurance company that has been licensed or registered by the appropriate authority in the State of Illinois to write boiler and pressure vessel insurance in the State of Illinois; or

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

A company in the business of providing third party inspection services that has recognition from the State of Illinois to perform inspection and design reviews for boilers and pressure vessels; or

An owner of boilers or pressure vessels who maintains a regularly established inspection department, whose organization and inspection procedures meet the requirements established by OSFM.

"Authorized Inspector" means an individual who is employed by an authorized inspection agency and meets the requirements of Section 505.180.

"Boiler" means a closed vessel used to heat water or other liquids or to generate steam or other vapors under pressure or vacuum by the application of heat resulting from the combustion of fuels, electricity, atomic energy or waste gases.

"Power boiler" means a boiler in which steam or other vapor is generated at a pressure of more than 15 psig and includes water boilers operating at pressures exceeding 160 psig or temperatures exceeding 250° F at or near the boiler outlet.

"High pressure, high-temperature water boiler" means a water boiler operating at pressures exceeding 160 psig or temperatures exceeding 250° F at or near the boiler outlet.

"Heating boiler" means a steam heating boiler operated at pressures not exceeding 15 psig, or a hot water heating boiler operated at pressures not exceeding 160 psig or temperatures not exceeding 250° F at or near the boiler outlet.

"Hot water supply boiler" means a boiler (including fired storage water heater) furnishing hot water to be used externally to itself at pressures not exceeding 160 psig or temperatures not exceeding 250° F at or near the boiler outlet.

"Certificate inspection" means an inspection, the report of which is used by the Agency as justification for issuing, withholding or revoking the Inspection Certificate.

"Condemned" means any boiler or pressure vessel, including related appurtenances, that has been inspected and declared unsafe, or disqualified by legal requirements, by the Agency.

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

"Design pressure" means the pressure used in the design of a boiler or pressure vessel for the purpose of determining the minimum permissible thickness or physical characteristics (e.g., material properties) of different parts of the vessel, in accordance with design standards of the ASME Code.

"Director" means the Director of the Illinois Emergency Management Agency and Office of Homeland Security.

"External inspection" means as complete an examination as can reasonably be made of the external surfaces of a boiler or pressure vessel. This examination shall be made while it is in operation, if possible.

"Inoperative" means a boiler, pressure vessel or attached appurtenance that is no longer capable of functioning within its design requirements. The inability of support equipment to operate does not cause a boiler or pressure vessel to be considered inoperative.

"Inservice inspection interval" means the period of time during which inservice examinations and system pressure tests are performed, as defined by the owner in accordance with ASME Code Section XI.

"Inservice inspection period" means a subdivision of the inservice inspection interval, as defined by the owner in accordance with ASME Code Section XI.

"Inservice Inspection Plan" means the documents prepared by the owner in accordance with paragraph IWA-2420 of the edition and addenda of Section XI approved by the NRC for use by the plant (10 year plan).

"Inspection" means examination and evaluation of documents and hardware by an Authorized Inspector to determine conformance of an item or an activity to the requirements of this Part.

"Inspection Certificate" means a certification issued by the Agency for the operation of a non-ISI boiler or pressure vessel or nuclear power system.

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

"ISI boiler or pressure vessel" means any boiler or pressure vessel, including related appurtenances, that is in the owner's Inservice Inspection Plan.

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

"Maintenance" means routine activities conducted on an item that are performed and controlled in accordance with the owner's procedures, including minor restorative actions, that are not otherwise classified as a repair, replacement or alteration.

"Maximum Allowable Working Pressure" or "MAWP" means the maximum gauge pressure permissible (in accordance with the design requirements) at the top of a vessel in its operating position at the design temperature. This pressure is the least of those calculated for every element of the vessel using nominal thickness exclusive of allowances for corrosion and thickness required for loadings other than pressure. It is the basis for the pressure setting of the pressure relieving devices (e.g., pressure relief valves) protecting the vessel. The design pressure may be used in place of the maximum allowable working pressure in all cases for which calculations are not made to determine the value of the maximum allowable working pressure.

"National Board" means the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus OH 43229.

"National Board Inspection Code" means the National Board Inspection Code published by the National Board and adopted and incorporated by the Agency in Section 505.40. Copies may be obtained from the National Board.

"NFPA" means the National Fire Protection Association, 1 Batterymarch Park, Quincy MA 02169-747102269.

"Non-ISI boiler or pressure vessel" means any boiler or pressure vessel, including related appurtenances, that is not in the owner's Inservice Inspection Plan.

"Non-standard boiler or pressure vessel" means any boiler or pressure vessel, including related appurtenances, that does not bear the Certification Mark with appropriate designator.

"NRC" means the United States Nuclear Regulatory Commission or any agency that succeeds to its function in the licensing of nuclear power reactors or facilities, or facilities for spent nuclear fuel.

"Nuclear facility" means a nuclear power station. There may be one or more nuclear power systems at a nuclear power station.

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

"Nuclear power system" means all ISI boilers and pressure vessels in a unit, including their appurtenances, at a nuclear facility that are inspected in accordance with an Inservice Inspection Plan. Such components are generally associated with systems that serve the purpose of producing and controlling the output of thermal energy from nuclear fuel and associated systems essential to the function and overall safety of the nuclear power system.

"OSFM" means the Illinois Office of the State Fire Marshal.

"Outage" means temporary suspension of operation of a component or system to conduct actions such as maintenance, forced repairs or testing of equipment.

"Owner" means any organization, person, firm or corporation legally responsible for the safe operation of any boiler or pressure vessel at a nuclear facility within the State.

"PSIG" means pounds per square inch gauge and is a measure of pressure.

"Pressure relief valve" means a safety valve, relief valve or safety relief valve.

"Pressure vessel" means an enclosed vessel in which pressure is obtained from an external source, or by applying heat from an indirect source or from a direct source other than boilers as defined in this Section. Reactor containments are not considered pressure vessels.

"Quality Assurance Program" means a controlled system of planned and systematic actions required to provide adequate confidence that the items designed and constructed are in accordance with the rules of the ASME Code Section III; or all the planned and systematic actions necessary to provide adequate confidence that a structure, system or component will perform satisfactorily in service in accordance with Appendix B of 10 CFR 50 (2007), as applicable.

"Refueling outage" means temporary suspension of power production of the nuclear power system to conduct actions, including refueling the reactor. Refueling outages normally occur approximately every 2 years.

"Reinstalled" means any boiler or pressure vessel, including related appurtenances, removed from its original setting and reinstalled at the same location or at a new location within the State of Illinois without change of ownership.

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

"Relief valve" means an automatic pressure relieving device, actuated by the static pressure upstream of the valve, that opens further with the increase in pressure over the opening pressure. It is used primarily for liquid service.

"Repair" means the process of restoring a nonconforming item by welding or brazing so that existing design requirements are met.

"Report of Inspection" means a report prepared by an Authorized Inspector that documents that a non-*ISI* boiler or pressure vessel meets the requirements of this Part for installation and periodic inspection.

"Reportable event" means any accident that either causes a boiler or pressure vessel to become inoperative due to damage from an explosion, catastrophic event or failure due to material condition, of either itself or an attached appurtenance, or results in death or bodily injury to a person.

"Rerated" or "Rerating" means alteration.

"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. It is primarily used for gas or vapor service.

"State Special" means a boiler or pressure vessel, including related appurtenances, of special construction that may not be constructed in accordance with the ASME Code. See Sections 505.170, 505.1700 and 505.2700 for the procedures for granting a State Special.

"Technical specifications" means part of the Updated or Final Safety Analysis Report and Operating License issued by the NRC that designates safety limits, limiting safety system settings, limiting conditions for operation and surveillance requirements for the safe operation of the nuclear facility.

"Updated or Final Safety Analysis Report" means a report required by the NRC in accordance with 10 CFR 50.34.

"Welding" means a group of processes in which coalescence is produced by heating with an arc or arcs, with or without the application of pressure and with or without the use of filler metal.

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

(Source: Amended at 50 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 505.40 Standards Incorporated by Reference**

The Agency hereby adopts and incorporates by reference the following codes and standards.

- a) The Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers with addenda thereto made. Those sections of the ASME Code listed in this Section are incorporated into the regulations of the Agency.
  - 1) ASME Boiler and Pressure Vessel Code, 1952 Edition including all addenda and editions through the 20252019 edition, for the following:
    - A) Section I, Rules for Construction of Power Boilers;
    - B) Section II, Materials
      - Part A – Ferrous Material Specifications
      - Part B – Nonferrous Material Specifications
      - Part C – Specifications for Welding Rods, Electrodes and Filler Metals
      - Part D – Properties (Customary and Metric);
    - C) Section III, Rules for Construction of Nuclear Facility Components
      - Subsection NCA – General Requirements for Division 1 and Division 2
        - Division 1 – Appendices
        - Division 2 – Code for Concrete Containments
        - Division 3 – Containment Systems and Transport Packaging's for Transportation and Storage of Spent Nuclear Fuel and High-Level Radioactive Material
        - Division 4 – Fusion Energy Devices
        - Division 5 – High Temperature Reactors;

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

- D) Section IV, Rules for Construction of Heating Boilers;
- E) Section V, Nondestructive Examination;
- F) Section VI, Recommended Rules for the Care and Operation of Heating Boilers;
- G) Section VII, Recommended Guidelines for the Care of Power Boilers;
- H) Section VIII, Rules for Construction of Pressure Vessels
  - Division 1
  - Division 2 – Alternative Rules
  - Division 3 – Alternative Rules for Construction of High Pressure Vessels;
- I) Section IX, Welding, Brazing, and Fusing Qualifications;
- J) Section X, Fiber-Reinforced Plastic Pressure Vessels;
- K) Section XII, Rules for Construction and Continued Service of Transport Tanks;
- L) Section XIII, Rules for Overpressure Protection.

2) ASME Boiler and Pressure Vessel Code, editions and addenda referenced in 10 CFR 50.55a, including all limitations and modifications contained therein, for the following:

- A) Section III, Rules for Construction of Nuclear Facility Components, Division 1; and
- B) Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, Division 1 – Rules for Inspection and Testing of Components of Light-Water-Cooled Plants.

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

AGENCY NOTE: The Agency will review programs at specific plants on the basis of the edition and addenda of Sections III and XI approved by the NRC for the specific plant.

- | b) The National Board Inspection Code, 20252019 edition, published by the National Board, except that "jurisdiction" shall be read as "Agency".
- | c) ASME CSD-1, 20242018 edition, Controls and Safety Devices for Automatically Fired Boilers
- | d) NFPA 85, 20232019 edition, Boiler and Combustion Systems Hazards Code.
- | e) ANSI/ASME N626, Qualification and Duties of Authorized Nuclear Inspection Agencies and Personnel, 1974 Edition including all addenda and editions through the N626b-1992 addendum. The Agency also adopts the successor standard to this standard, ASME QAI-1, Qualification for Authorized Inspection, 1995 edition, including all addenda and editions through the 20252018 edition.
- | f) For documents included in subsections (a) through (e), the Agency is incorporating only those editions and addenda indicated. The Agency is not incorporating any subsequent edition or addendum to these documents. All documents are available for public review, by appointment, at the Agency's offices, 1035 Outer Park Drive, Springfield, Illinois.

(Source: Amended at 50 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 505.90 Address and Telephone Number for Notifications and Inquiries**

Written reports or communications concerning or required by this Part shall be addressed to:

Illinois Emergency Management Agency and Office of Homeland Security  
ATTN: Nuclear Facility Inspection  
1301 Knotts Street  
Springfield, IL 62703

The Agency may be reached by telephone at (217)782-2700 or for 24-hour response at (217)800782-7860.

(Source: Amended at 50 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**SUBPART C: NON-ISI BOILERS AND PRESSURE VESSELS**

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

**Section 505.2500 Repairs and Alterations**

Repairs and alterations of non-ISI boilers and pressure vessels, and repairs of pressure relief valves associated with non-ISI boilers and pressure vessels, except boilers and pressure vessels and those pressure relief valves associated with boilers and pressure vessels that are exempt under Section 505.50(a), shall be made in accordance with this Section. The requirements of this Section are subject to the limitations of Section 505.20(c).

- a) Non-ISI boilers and pressure vessels that are repaired or altered shall be repaired or altered in accordance with the National Board Inspection Code or this subsection (a). The requirements of this subsection (a) are limited to welded repairs and welded and non-welded alterations of non-ISI boilers and pressure vessels. When requirements for a repair or alteration are not given, it is intended that, subject to approval of the Authorized Inspector, details of design and construction, insofar as practical, will be consistent with the ASME Code for boilers and pressure vessels constructed to the ASME Code, or the code to which the item was originally constructed for boilers and pressure vessels not constructed to the ASME Code or the repair or alteration rules of the National Board Inspection Code.
  - 1) All non-ISI boilers and pressure vessels covered by the Act that are repaired shall be repaired by one of the following organizations:
    - A) An owner and those organizations under contract to the owner, provided that:
      - i) the repairs are made in accordance with a Quality Assurance Program that meets the requirements of 10 CFR 50 Appendix B (2007) and has been approved by the NRC;
      - ii) all portions of the owner's 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsection (a)(1)(A)(i), that are applicable to a repair activity are applied to the repair; and
      - iii) the owner notifies the Agency of its intention to apply 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsection (a)(1)(A)(i), to the repair of boilers and pressure vessels. This notification only needs to be given once for all repairs of boilers and pressure vessels performed under the owner's 10 CFR 50 Appendix B Quality Assurance Program at the nuclear facility.

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

AGENCY NOTE: The application of the owner's 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsections (a)(1)(A)(i), (ii) and (iii), is subject to review by the Authorized Inspector.

- B) An organization in possession of a valid "R" Certificate of Authorization issued by the National Board.
- C) An organization authorized by the Division of Boiler and Pressure Vessel Safety, Office of the State Fire Marshal, to repair boilers and pressure vessels.

2) Repairs shall be initiated only after they have been authorized by the Authorized Inspector who has reviewed and accepted the weld procedures, welders and welding operators' qualifications and repair methods. The Authorized Inspector may give prior approval for repairs of a routine nature. In every case the Authorized Inspector shall be advised of each repair under prior agreement.

3) All non-ISI boilers and pressure vessels covered by the Act that are altered shall be altered by one of the following organizations:

- A) An owner and those organizations under contract to the owner, provided that:
  - i) the alterations are made in accordance with a Quality Assurance Program that meets the requirements of 10 CFR 50 Appendix B and has been approved by the NRC;
  - ii) all portions of the owner's 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsection (a)(3)(A)(i), that are applicable to an alteration activity are applied to the alteration; and
  - iii) the owner notifies the Agency of its intention to apply 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsection (a)(3)(A)(i), to the alteration of boilers and pressure vessels. This notification only needs to be given once for all alterations of boilers and pressure vessels performed under the owner's 10 CFR 50 Appendix B Quality Assurance Program at the nuclear facility.

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

AGENCY NOTE: The application of the owner's 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsections (a)(3)(A)(i), (ii) and (iii), is subject to review by the Authorized Inspector.

- B) An organization in possession of a valid "R" Certificate of Authorization issued by the National Board, provided the alterations are within the scope of that authorization.
- 4) Alterations shall be initiated only after they have been authorized by the Authorized Inspector who has reviewed and accepted the alteration methods and calculations. If considered necessary, the Authorized Inspector shall make an inspection of the object before granting authorization.
- 5) Reports documenting repairs and alterations shall be sent to the Agency in addition to the distribution required by the National Board Inspection Code.
- 6) Documentation of repairs and alterations shall be in accordance with the National Board Inspection Code, except that, in lieu of a form R-1 or R-2, an alternative form containing equivalent information may be used. All alternative forms shall be signed by the Authorized Inspector. All alternative forms shall be approved by the Agency prior to use. The Authorized Inspector shall determine whether the completion of the form R-1, R-2, or an alternative form is required for routine repairs.
- 7) Repairs and alterations shall be accepted by either an Authorized Inspector employed by the Authorized Inspection Agency responsible for the boiler or pressure vessel or by an Authorized Inspector employed by the Authorized Inspection Agency of record for the organization making the repair or alteration. It shall be the responsibility of the organization making the repair or alteration to coordinate the acceptance inspection of the repair or alteration.
- 8) For pressure parts, the rules of Part 3, Section 3 of the National Board Inspection Code shall apply.
- 9) Pressure Testing

SECOND NOTICE DOCUMENT  
32 ILL. ADM. CODE 505

- A) The Authorized Inspector may require a pressure test after completing a repair to a boiler or pressure vessel when in the Authorized Inspector's judgment one should be conducted.
- B) A pressure test in accordance with the National Board Inspection Code shall be applied to the boiler or pressure vessel on the completion of an alteration.

10) For repair methods, the rules of Part 3 of the National Board Inspection Code shall apply.

11) Alteration methods shall comply with the general requirements of this subsection (a), and with the appropriate ASME Code Section or Part 3 of the National Board Inspection Code, as applicable, including any service restrictions.

12) Major replacement of pressure parts, including drums and shells, that are fabricated by welding and for which a Manufacturers Data Report is required by the applicable ASME Code Section shall be fabricated by a manufacturer having an ASME Certificate of Authorization and the appropriate Certification Mark with appropriate designator. The item shall be inspected, stamped with the applicable Certification Mark with appropriate designator and the word "PART", and reported on the appropriate Manufacturers Partial Data Report.

13) When a repair or alteration requires removal of that part of a non-ISI boiler or pressure vessel containing the Code stamping, the Authorized Inspector shall, subject to the approval of the Agency, witness the making of a facsimile of the stamping, the obliteration of the old stamping and the transfer of the stamping to the new part. When the stamping is on a nameplate, the Authorized Inspector is to witness the transfer of the nameplate to the new part. The Certification Mark with appropriate designator is not to be restamped.

14) For rerating, the rules of this subsection (a) and Part 3 of the National Board Inspection Code shall apply. Additionally, the following shall apply:

- A) All requirements in Part 3 of the National Board Inspection Code and this subsection (a) shall be met to the satisfaction of the Authorized Inspection Agency at the location of the installation.

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

- B) Revised calculations verifying the new service conditions shall be required from the original manufacturer or, when the calculations cannot be obtained from this source, they may be prepared by an engineer in accordance with Part 3 of the National Board Inspection Code.

- C) The boiler or pressure vessel shall be pressure tested for the rerated condition as required by subsection (a)(9)(B).

**15) Nameplates and Stamping for Repair and Alteration**

- A) The rules of Part 3, Section 5 of the National Board Inspection Code shall apply. The exceptions and clarifications of this subsection (a)(15) shall also apply.

- B) For owners that act as the repair organization under the provisions of subsection (a)(1)(A) for repairs or under subsection (a)(3)(A) for alterations who are not in possession of a valid "R" Certificate of Authorization issued by the National Board, the requirements for nameplates and stamping in Part 3, Section 5 of the National Board Inspection Code shall not apply. All other requirements shall be met.

- b) Pressure relief valves associated with non-ISI boilers and pressure vessels shall be repaired in accordance with the National Board Inspection Code or with this subsection (b).

- 1) All pressure relief valves covered by this subsection (b) that are repaired shall be repaired by one of the following organizations:

- A) An owner and those organizations under contract to the owner, provided that:

- i) the repairs are made in accordance with a Quality Assurance Program that meets the requirements of 10 CFR 50 Appendix B and has been approved by the NRC;

- ii) all portions of the owner's 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsection (b)(1)(A)(i), that are applicable to a repair activity are applied to the repair; and

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

- iii) the owner notifies the Agency of its intention to apply 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsection (b)(1)(A)(i), to the repair of these pressure relief valves. This notification only needs to be given once for all repairs of pressure relief valves performed under the owner's 10 CFR 50 Appendix B Quality Assurance Program at the nuclear facility.

**AGENCY NOTE:** The application of the owner's 10 CFR 50 Appendix B Quality Assurance Program, referenced in subsections (b)(1)(A)(i), (ii) and (iii), is subject to review by the Authorized Inspector.

- B) The manufacturer of the valve who is in possession of a valid ASME "V", "NV" or "UV" Certificate of Authorization, provided repairs are within the scope of the organization's Certificate of Authorization and are performed under the organization's Quality Control System or Quality Assurance System, as applicable.
- C) An organization in possession of a valid "VR" Certificate of Authorization issued by the National Board, provided repairs are within the scope of the organization's Certificate of Authorization and are performed under the organization's Quality Control System.
- D) An organization in possession of a valid Certificate of Authorization issued by the Division of Boiler and Pressure Vessel Safety, Office of the State Fire Marshal, to repair pressure relief valves provided repairs are within the scope of the organization's Certificate of Authorization and performed under the organization's accepted Quality Control System.

2) Repair of a pressure relief valve is considered to be the replacement or machining of any critical part, lapping of seat and disc or any other operation that may affect the flow passage, capacity, function or pressure retaining integrity. Disassembly and reassembly or adjustments that affect the pressure relief valve function are not considered a repair, but a test confirming the valve's set pressure shall be performed. The initial installation, testing and adjustments of a new pressure relief valve on a non-ISI boiler or pressure vessel are not considered a repair.

3) Nameplates and Stamping

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

- A) The rules of Part 4, Section 4 of the National Board Inspection Code shall apply. The exceptions and clarifications of this subsection (b)(3) shall also apply.
- B) Individuals authorized by the Division of Boiler and Pressure Vessel Safety, Office of the State Fire Marshal, who are properly trained and qualified employees of the owner may make adjustments to the set pressure provided the adjusted settings and the date of the adjustment are recorded on a metal tag secured to the seal wire. All external adjustments shall be resealed showing the identification of the organization making the adjustments.
- C) For owners that act as the valve repair organization under the provisions of subsection (b)(1)(A) who are not in possession of a valid "VR" Certificate of Authorization issued by the National Board, the requirements for stamping and nameplates in Part 4, Section 4 of the National Board Inspection Code shall not apply. All other requirements shall be met.

4) Performance Testing

- A) The rules of Part 4, Section 4 of the National Board Inspection Code shall apply, regardless of whether the "VR" stamp will be or has been applied. The exceptions and clarifications of this subsection (b)(4) shall also apply.
- B) For owners that act as the valve repair organization under the provisions of subsection (b)(1)(A) who are not in possession of a valid "VR" Certificate of Authorization issued by the National Board, performance testing equipment qualified by the owner under Part 4, Section 4 of the National Board Inspection Code shall be done by the owner. The Authorized Inspector shall witness the qualification of test equipment and review the documentation of the qualification.

5) Organizations that repair pressure relief valves under subsections (b)(1)(B) through (b)(1)(D) may perform field repairs in accordance with the following requirements.

- A) Qualified technicians in the employ of the repair organization perform the repairs.

**SECOND NOTICE DOCUMENT**  
**32 ILL. ADM. CODE 505**

- B) Procedures that address field repairs are contained in the Quality Control System or Quality Assurance System, as applicable, and are maintained.
- C) All functions affecting the quality of the repaired pressure relief valves are controlled from the location for which the appropriate authorization was issued.
- D) Periodic audits of work carried out in the field are made by quality control personnel of the repair organization to ensure that the requirements of the Quality Control System or Quality Assurance System, as applicable, are met. This audit may include witnessing the test of the field repaired pressure relief valve.

(Source: Amended at 50 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## STATE MANDATES ACT QUESTIONNAIRE

**Agency:** Illinois Emergency Management Agency and Office of Homeland Security

**Heading of the Part:** Safe Operation of Nuclear Facility Boilers and Pressure Vessels  
(32 Ill. Adm. Code 505)

**Administrative Code Citation:** Vol. 49, Issue 17, Page 5647

1. Does this rulemaking affect any of the following:

Municipality \_\_\_\_\_

Other Unit of Local Govt. \_\_\_\_\_

County \_\_\_\_\_

School District \_\_\_\_\_

Township \_\_\_\_\_

Community College District \_\_\_\_\_

2. Does this rule require any of the above entities to establish, expand or modify its activities in such a way as to necessitate additional expenditures from local revenues?

Yes \_\_\_\_\_

No X

Number of units affected \_\_\_\_\_

If yes, please estimate the amount of additional expenditures necessitated by this rulemaking per unit of government \$ \_\_\_\_\_

NOTE: If the dollar amount, or total number of units affected is unknown, please outline and attach to this form an explanation of the steps taken by the agency to determine the approximate expense of the rulemaking, and the number of units affected.

If no, please explain why the rule does not necessitate such additional expenditures

No effect on State revenues or expenditures for units of government listed in item (1) above.

3. Were any alternatives that do not necessitate additional expenditures considered?

Yes \_\_\_\_\_

No X

If yes, please list these alternatives and explain why they were rejected.

4. What are the policy objectives of the rulemaking (Please be specific)

Safe operation, design, construction, installation, inspection, in-service examination and testing, repair and alteration of boilers and pressure vessels within nuclear facilities in the State.

5. Please explain why the policy objectives of this rule cannot be achieved in the absence of the rule or through a rule that does not create a State Mandate.

Rules are implemented and authorized by the Nuclear Safety Law of 2004 [20 ILCS 3310/25], Sections 2a and 2b of the Boiler and Pressure Vessel Safety Act [430 ILCS 75/2a and 2b] and Section 8(a)(8) of the Illinois Nuclear Safety Preparedness Act [420 ILCS 5/8(a)(8)].

## **AGENCY ANALYSIS OF ECONOMIC AND BUDGETARY EFFECTS OF PROPOSED RULEMAKING**

Agency: Illinois Emergency Management Agency and Office of Homeland Security

Part/Title: Safe Operation of Nuclear Facility Boilers and Pressure Vessels (32 Ill. Adm. Code 505)

Illinois Register Citation: Vol. 49, Issue 17, page 5647

Please attempt to provide as dollar-specific responses as possible and feel free to add any relevant narrative explanation.

1. Anticipated effect on State expenditures and revenues.
  - (a) Current cost to the agency for this program/activity. \$ 13,000 (average)
  - (b) If this rulemaking will result in an increase or decrease in cost, specify the fiscal year in which this change will first occur and the dollar amount of the effect.

No increase or decrease in cost will result from this rulemaking.
  - (c) Indicate the funding source, including Fund and appropriation lines, for this program/activity.

Funding to be provided through the Illinois Nuclear Safety Preparedness Act, 420 ILCS 5, appropriation line 0796-58820-1120-0000.
  - (d) If an increase or decrease in the costs of another State agency is anticipated, specify the fiscal year in which this change will first occur and the estimated dollar amount of the effect.

No cost to another State agency is anticipated.
  - (e) Will this rulemaking have any effect on State revenues or expenditures not already indicated above? Specify effects and amounts.

No effect on State revenues or expenditures besides the current average cost indicated in item (a) above.
2. Economic effect on persons affected by the rulemaking.
  - (a) Indicate the economic effect and specify the persons affected:

Positive    Negative    No effect X

Persons affected: Nuclear facilities within the State

Dollar amount per person: \$0.0

Total Statewide cost: \$0.0

(b) If an economic effect is predicted, please briefly describe how the effect will occur.

No economic effect.

(c) Will the rulemaking have an indirect effect that may result in increased administrative costs? Will there be any change in requirements such as filing, documentation, reporting or completion of forms? Compare to current requirements.

No changes in reporting requirements, documentation, filing or completion of forms. No additional administrative costs compared to current requirements.