

KEEPING JURISDICTIONAL INSPECTIONS ON COURSE:

ENHANCED BOILER AND PRESSURE VESSEL REGULATORY
ENFORCEMENT MAY INCREASE FINES AND PENALTIES



CONTENT:

- 2 KEY REGULATORY COMPLIANCE STEPS
- 3 GLOBAL CODES AND REGULATIONS GOVERNING INSPECTIONS
- 4 THE BENEFITS OF INSPECTION PROGRAM PLANNING AND IMPLEMENTATION
- 5 HOW MARSH RISK CONSULTING CAN HELP

Several US jurisdictions have adopted regulations permitting the issuance of monetary fines for violations of boiler and pressure vessel regulations. Other jurisdictions have drafted similar regulations that are awaiting approval. These monetary fines can range from hundreds of dollars to more than US\$1000 per jurisdictional object for regulatory violations.

Many states and some cities issue certificates permitting the continued operation of certain equipment such as boilers, water heaters, pressure vessels, heat exchangers, etc. Statutory regulations require periodic inspections to renew the certificates of operation. Commissioned inspectors (CI), under the employ of an Authorized Inspection Agency (AIA, i.e., an insurance company), or inspectors employed by the jurisdictional authority are properly licensed to ensure compliance with the American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code, National Board Inspection Code (NBIC), and individual jurisdictional requirements.

If you own or operate equipment that requires a certificate of inspection to operate legally, you need to take important steps to maintain regulatory compliance and mitigate the potential for fines.

“The thought process of planning and implementing an inspection program for boilers and pressure vessels will help ensure compliance and alleviate potential civil fines.”

KEY REGULATORY COMPLIANCE STEPS

First, a planning process should surround a well-managed inspection program. This includes conducting a complete inventory of boilers and pressure vessels subject to inspection. The inventory list should be comprehensive and include, but not be limited to, information about each boiler or vessel:

- Type.
- Year.
- Location.
- Size.
- Use.
- Design criteria.
- Overpressure protection data.
- Certificate expiration date.

The inventory list may also include boilers and vessels that fall outside a regulatory inspection but are equally important from a safety, reliability, and mission-critical standpoint.

Second, obtain and maintain the original documentation such as system drawings, engineering files, and manufacturers' data reports for each boiler and vessel. The manufacturers' data reports are critical to identify all design criteria to complete a code repair or alteration.



Next, determine the steps required to prepare properly for the object inspection. This task may differ depending on equipment type and/or type of inspection required. Prioritize the object inspections based on certificate expiration date and allow sufficient resources to adequately prepare the equipment for a thorough and seamless inspection. Frequent communication and scheduling of inspections with your AIA is necessary to facilitate an on-time inspection. This will also allow sufficient time to correct any code violations so as to avoid civil penalties.

Finally, manage the change of service for boilers and pressure vessels. Safety must always take center stage when removing equipment from service or installing new equipment. The final installation will consider jurisdictional requirements; therefore, a CI should always be included in the planning stages. Jurisdictional notice from the AIA for removal and installation of new equipment subject to inspection is required. The management philosophy regarding equipment change must be appropriate to the circumstances; otherwise, the resultant loss to the vessel, surrounding property, and to human life could be tragic.

GLOBAL CODES AND REGULATIONS GOVERNING INSPECTIONS

In North America, design and certification is governed by the ASME Boiler and Pressure Vessel Code or API Standard 620, which provides rules for lower pressure vessels not covered by the ASME Code in North America.

From an international perspective, codes may include the European Union's Pressure Equipment Directive (PED), Japan's Industrial Standard (JIS), Canada's CSA B51, Australia's Australian Standards, and other international standards like Lloyd's, Germanischer Lloyd, Det Norske Ventas, and Société Générale de Surveillance (SGS S.A.).



US state codes vary with regard to the size of boilers and vessels subject to regulatory inspection. In addition, the frequency of required inspections varies from state to state.

However, by definition, a “boiler” is typically defined as “a closed vessel in which water or other liquid is heated, steam or vapor is generated, steam is superheated, or any combination thereof, under pressure or vacuum, for use external to itself, by the direct application of energy from the combustion of fuels, from electricity or nuclear energy.” This definition includes water heaters that exceed 200,000 Btu/hr heat input, 200 degrees Fahrenheit at the outlet, or 120 gallons nominal water containing capacity. Also included are fired units for heating or vaporizing liquids other than water where these units are separate from processing systems and are complete within themselves.

“We offer solutions across a broad spectrum of risks.”

“Pressure vessels” are enclosed vessels or tanks used to store a liquid or gas under pressure. Typically these vessels are wide in scope and have a maximum internal or external allowable working pressure greater than 15 psig and/or an inside diameter, height, width, or cross-sectional diagonal exceeding six inches per ASME. Liquefied petroleum gas (LPG) i.e., propane, propylene, butane, and butylene) vessels and low temperature cryogenic vessels (i.e., liquid hydrogen, nitrogen, and helium) may be included depending on the installed location.

THE BENEFITS OF INSPECTION PROGRAM PLANNING AND IMPLEMENTATION

The thought process of planning and implementing an inspection program for boilers and pressure vessels will help ensure compliance and alleviate potential civil fines. Programs will vary from one facility to another, but the basic ingredients are still similar. Because it can be a monumental task, the responsible individual should consider performing the program in phases and even concentrating the effort on individual systems for larger facilities to keep



the program manageable. When developed and executed methodically, however, such a program allows for regular, timely, and cost-efficient inspection of critical systems and supports full compliance of jurisdictional regulations.

HOW MARSH RISK CONSULTING CAN HELP

Marsh Risk Consulting's (MRC) Property Risk Consulting Practice includes a team of boiler and machinery risk professionals with knowledge of the risk control aspects of importance to businesses, their insurers, and local regulatory authorities.

We offer clients a broad range of fully integrated services in areas such as:

- Machinery reliability risk analysis.
- Operations and maintenance performance auditing.
- Managing risk or performance of third-party suppliers.
- Contingency planning for interruption of steam, electricity, or fuel.
- Energy supply management and reliability.
- Spare parts surveys.
- Cost structure identification.
- Emergency and secondary systems review.

We offer solutions across a broad spectrum of risks, including, but not limited to, power and utilities, energy, chemical, transportation, health care, and manufacturing.

WEB SITES OF RELEVANT REGULATORY AND STANDARDS BODIES

US Occupational Health and Safety Administration
<https://www.osha.gov>

American Society of Mechanical Engineers
<https://www.asme.org>

National Board
<http://www.nationalboard.org>

MARSH RISK CONSULTING

To learn more about relevant US state laws and our boiler and machinery risk management solutions, please contact your local Marsh representative or MRC professional. You can also reach our experts directly as follows:

Phone: 866 9AtRisk (866 928-7475 in the United States and Canada or +1 212 345-9589)

E-mail: Marsh.PropertyRiskConsulting@marsh.com.

Further insight and related solutions can be found on: www.marsh.com or www.marshriskconsulting.com.

Marsh is one of the Marsh & McLennan Companies, together with Guy Carpenter, Mercer, and Oliver Wyman.

This document and any recommendations, analysis, or advice provided by Marsh (collectively, the "Marsh Analysis") are not intended to be taken as advice regarding any individual situation and should not be relied upon as such. This document contains proprietary, confidential information of Marsh and may not be shared with any third party, including other insurance producers, without Marsh's prior written consent. Any statements concerning actuarial, tax, accounting, or legal matters are based solely on our experience as insurance brokers and risk consultants and are not to be relied upon as actuarial, accounting, tax, or legal advice, for which you should consult your own professional advisors. Any modeling, analytics, or projections are subject to inherent uncertainty, and the Marsh Analysis could be materially affected if any underlying assumptions, conditions, information, or factors are inaccurate or incomplete or should change. The information contained herein is based on sources we believe reliable, but we make no representation or warranty as to its accuracy. Except as may be set forth in an agreement between you and Marsh, Marsh shall have no obligation to update the Marsh Analysis and shall have no liability to you or any other party with regard to the Marsh Analysis or to any services provided by a third party to you or Marsh. Marsh makes no representation or warranty concerning the application of policy wordings or the financial condition or solvency of insurers or re-insurers. Marsh makes no assurances regarding the availability, cost, or terms of insurance coverage.

Copyright 2014 Marsh LLC. All rights reserved. Compliance MA14-12741 6309