



THE PRESSURE NEWS

Alberta Boilers Safety Association

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CONTROL OF DRAWING REVISIONS

Design control is a fundamental part of pressure equipment manufacturing. One aspect of design control is that when design drawings are revised, there **must** be a change in the revision number (or letter) of the drawing. This may sound too elementary to warrant stating, but increasingly we are seeing drawings being revised without a change to the drawing revision number and with no indication of what the change or changes were.

If there are two or more different "Rev.Os" on the shop floor, how does anyone know which one to build to, or later, which one was followed? If there are no revision triangles or equivalent on the revised drawings, how does anyone discern what has been changed without comparing every line and number or word on the new drawing with the old one? How efficient is this process? What if something is missed in the comparison?

ABSA will not accept resubmissions of drawings that do not show a higher revision number (or letter) than the one previously received. It must also be obvious to us what the changes were. A note in the Revision Block saying "General Revision" without accompanying revision triangles is of little use to us. Also, **all** revisions made between the revision you are submitting and the last revision submitted to ABSA must be identifiable.

Time spent by ABSA staff in trying to figure out what has been changed on a drawing increases the turn-around time for design reviews. If any of the foregoing applies to you, please do your part in speeding up the process. You will also help the workers who have to read the drawings on the shop floor and you will have improved your quality system and the efficient operation of your company.

NATIONAL BOARD ACCEPTS CSA B51 CODE

On August 6, the National Board Board of Trustees announced the acceptance of the first new code of construction, other than the ASME code, to meet the requirements of the recent "Criteria for Registration" document.

A portion of the Canadian Standards Association (CSA) B51, 1995 edition with no addenda, has been approved for registration. The accepted portion of the code includes only boilers (including boiler external piping) and pressure vessels as defined in Part 1 of the standard. The pressure vessels excluded are portable tanks for liquified petroleum gas service, liquified natural gas containers, compressed natural gas containers, and vessels for highway transport of dangerous goods.

In order to register a B51 boiler or pressure vessel with the National Board, manufacturers must have an accepted quality assurance program and must provide for third-party inspection by a National Board commissioned inspector with an "A" or "B" endorsement.

On May 6, the "Criteria for Registration" document was accepted by National Board members allowing international codes to be considered for registration. The review of two British codes is scheduled for completion in January 1998.

Reprint from website //www.nationalboard.org
courtesy of the National Board of Boiler and Pressure Vessel Inspectors

LOW WATER FUEL CUT-OFFS A WARNING TO HEATING BOILER OWNERS AND OPERATORS

In the 1997 Spring Issue of the National Board Bulletin, an official publication of the National Board of Boiler and Pressure Vessel Inspectors, we noted an all too familiar statistic.

During 1996, a total of 1211 incidents were reported in North America with respect to heating boilers (both steam and water) and 602 of them (fully 49.7%) were caused by a low water condition. Of the remaining 609 incidents, 346 were reportedly caused by operator error or poor maintenance. This shows that over 78% of all incidents involving heating boilers occur as a result of low water condition and/or operator error or poor maintenance.

The National Board 1996 Incident Report statistics are based on reports received from a majority of jurisdictional authorities and

authorized inspection (insurance) agencies throughout Canada and the USA. In Alberta, between April 1, 1997 and August 31, 1997, ABSA investigated 12 pressure equipment incidents, of which three were the result of heating boiler low water conditions caused by the low water fuel cut-off devices' failing to operate.

In order to reduce these "incidents" to the lowest possible level, we strongly urge owners and operators of low pressure heating boilers to follow the guidelines detailed in our brochure "Safe Operation and Care of Heating Boilers". You will find that high on the list of recommendations is the routine testing of the LWCO device and the annual overhaul of same.

Safety valves and low water fuel cut-off/shutdown devices are your LAST lines of defence against boiler failure. Look after them and ensure they operate properly. Should you require further information, please contact your local ABSA Safety Codes Officer (Inspector).

**A REVIEW OF
NEW CONSTRUCTION INSPECTION
AUTHORIZED INSPECTORS, AUTHORIZED INSPECTION
AGENCIES/AUTHORITIES (AIA) AND RELATED ISSUES**

This article is aimed at clarifying new construction inspection with particular reference to the definition of "Authorized Inspector", "Authorized Inspection Agency" and similar terms used in the codes and the role of ABSA in this respect.

Authorized Inspector

Because of the possible catastrophic consequences of failure and for public safety reasons, the third party inspection concept has been a feature of pressure equipment construction around the world. Generally, an inspector, not associated with and independent of the pressure equipment manufacturer and the owner, will conduct, impartially, some of the inspection functions during the construction of the equipment.

The CSA B51 Code (Clause 5.2.1) provides for construction inspection in Canada "by an inspector employed by a provincial boiler and pressure vessel inspection jurisdiction, or where accepted by the jurisdiction having authority in the province of fabrication, the inspection may be carried out in an ASME shop by an inspector holding a valid National Board commission and employed by an authorized inspection agency as defined in the ASME Code. In the latter case, the boiler or pressure vessel shall be registered with the National Board"

For the ASME Boiler and Pressure Vessel Code, generally, it is required that "inspection shall be by an Inspector regularly employed by an ASME accredited Authorized Inspection Agency, i.e., the inspection organization of a state or municipality of the US, a Canadian province, an insurance company authorized to write boiler and pressure vessel insurance . . ." (See Section VIII Div. 1, Paragraph UG-91 and similar paragraphs in other Sections).

Authorized Inspection Agency (AIA)

Paragraph 5-1.1.1, Part 5 (Qualifications and Duties for Authorized Inspection Agencies (AIA) and Inspector Supervisors, and Qualifications for Inspectors of Boilers

and Pressure Vessels) of ASME QAI-1, Qualifications for Authorized Inspection defined AIA as one "designated by or acceptable to, the appropriate legal authority of the states of the United States of America, or provinces of Canada, that adopted one or more sections of the ASME Code." The standard further requires that the AIA shall either be a jurisdiction or an insurance company and in the latter case, "the company shall also obtain authorization to provide inspection service from the jurisdictional authorities that have the responsibility of administering the boiler and pressure vessel laws . . ." The Rules and Regulations of the National Board Boiler and Pressure Vessel Inspectors have similar provisions for AIA's.

Para. 5-3.1 of ASME QAI-1 also requires that "All Inspectors shall comply with the National Board Rules and Regulations, Articles I and II and hold a valid State Certificate of Competency (where required) and a valid NB Commission with an "A" endorsement." In this way, ASME further restricts the inspector to being an employee of a jurisdictional inspection organization or an insurance company which must have the authorization from the jurisdictional authority administering the boiler and pressure vessel laws. Irrespective of whether the AIA is a jurisdictional inspection organization or an insurance company, it should also be noted that ASME has introduced AIA accreditation certification. For inspections where the ASME code symbol stamps are applied, the AIA has to obtain ASME accreditation certification and this requirement is effective July 1997. (See also Vol. 1 Issue 5 on ASME accreditation of AIA.)

Overseas Codes and Standards

For overseas codes and standards, there are similar but different provisions for "Inspectors" and AIA. In the case of British Standard BS5500 "Unfired fusion welded pressure vessels", the Inspection Authority is "The body or organization that verifies that the vessel has been

designed, constructed and tested in accordance with the standard" and the Regulating Authority is "The authority in the country of installation that is legally charged with the enforcement of the law and regulations of that country relating to pressure vessels." Also, it states that "Where necessary, it is the responsibility of the purchaser to ensure that the Inspecting Authority is acceptable to the Regulatory Authority." Similarly, the Australian Standard AS1210 states that "pressure vessels for use in Australia are governed by Acts and Regulations administered by Inspecting Authorities in each State and Territory" and that "The Inspecting Authority concerned shall satisfy itself that the vessel has been designed, constructed, tested and inspected to the requirements of this standard."

Alberta Requirements

For Alberta, the Design Construction and Installation of Boilers and Pressure Vessels Regulations, under the Safety Codes Act, makes provision for the jurisdiction inspection of new pressure equipment construction. The Regulations also adopt the CSA B51 Code and ASME Boiler and Pressure Vessel Code as part of the regulations. Accordingly, the requirements of the CSA B51 and the ASME Codes also apply with respect to new construction inspection except in situations allowed for specifically by the regulations or as accepted as equivalent or allowed as a variance by the Administrator. The Minister of Labour, through the Government Organization Act and the Safety Codes Act, delegated ABSA as the Delegated Administrative Organization (DAO) to administer all pressure equipment safety programs including "construction inspection of new pressure equipment."

Authorized Inspectors and Safety Codes Officers

With respect to the certification of inspectors, under the Safety Codes Act (SCA), the Safety Codes Council (SCC) requires the certification of and designation of powers for Safety Codes Officers (SCOs) to undertake

inspection activities under Act and associated regulations. Information Bulletins Nos. 9 and 17 of the SCC delineate the qualification, certification and designation of powers with respect to SCOs in the Boilers discipline. New construction inspection and design review are activities restricted to SCOs in the employ of the jurisdictional organization only.

So, through the Alberta Government delegation and the Safety Codes Council's policy, in the case of new construction inspection, irrespective of the codes used, in accordance with the Alberta Safety Codes Act, ABSA is the only agency to perform new construction inspection functions within Alberta. In this role, ABSA is the jurisdictional inspection organization that may also be defined as the Inspection Jurisdiction, Inspection Authority or Authorized Inspection Agency depending on the codes used.

SAFETY VALVE SERVICING

National Board Publication NB-18 lists those device designs currently certified in accordance with the National Board capacity certification program. Organizations in Alberta setting, servicing, or repairing pressure relief valves must have proper facilities, a satisfactory written quality control system for the work to be carried out and an Alberta Certificate of Authorization. Those organizations authorized under the Alberta Safety Codes Act are being required to have a current edition of NB-18.

Please arrange to have a copy of NB-18 in your reference library prior to your next scheduled review by ABSA.

Copies of NB-18, *Pressure Relief Device Certifications*, can be obtained from:

The National Board of Boiler and Pressure Vessel Inspectors
Order Department
1055 Crupper Avenue
Columbus, Ohio 43229 - 1183
U.S.A.
Phone (614) 888 - 8320, ext 219
Fax (614) 847-1147
Email: orders@nationalboard.org

ABSA FORMS

The current versions of official ABSA forms are listed below. These forms or their equivalents are required to document specific activities under the Safety Codes Act. Please ensure that your organization is using the current version of these forms as identified by the revision dates listed.

Copies of these forms are available at each ABSA office.

All forms identified show the minimum required information that must be documented. If your organization has transcribed any of these forms into an electronic format, please ensure there are suitable controls in place to prevent any required information from being deleted or omitted, as we have found instances where key information such as pressure tests has been omitted from templates.

AB Form No.	Description
AB-3 Rev.(96/08)	Suppliers - Status Report
AB-8 Rev.(97/09)	Installation Report for Cast Iron Sectional Boiler
AB-10 Rev.(97/02)	Boiler & Pressure Vessel - Status Report
AB-11 Rev.(97/03)	Pressure Equipment Inspection Report Summary
AB-12 Rev.(97/03)	Owner's PV Inspection Report
AB-13 Rev.(97/02)	Inspection&Test of Cargo Transport Vessel Without Manway
AB-25 Rev.(97/02)	Manufacturer's Data Report for Pressure Vessels
AB-28 Rev.(96/08)	Manufacturer's Data Report (indirect fired heat coil)
AB-29 Rev.(96/08)	Registration of Quality Control Program Application
AB-31 Rev.(97/06)	Design Registration Application
AB-40 Rev.(96/09)	Boilers and Pressure Vessel Repair or Alteration Report
AB-41 Rev.(96/12)	Statutory Declaration - Registration of Fittings
AB-66 Rev.(96/11)	Application for Engineer's/Operator's Examination
AB-67 Rev.(97/07)	Application for Temporary Certificate of Competency
AB-69 Rev.(96/08)	Report on Certification & Perf. Qual. of a Grade 'C' Welder
AB-70 Rev.(96/08)	Application for Machine Welding Operator
AB-73 Rev.(97/04)	Annual Renewal of Engineer's & Operator's Certificates
AB-75 Rev.(96/11)	Application for Safety Codes Officer Examination
AB-77 Rev.(97/10)	Declaration/Application for Duplicate Cert or P.Q. Card
AB-81 Rev.(96/08)	Completion of Construction Declaration
AB-83 Rev.(97/01)	Construction Data Report for Piping Systems
AB-96 Rev.(96/08)	General Engineering Requirement for Design & Construction of Piping System

STARTING HEATING BOILERS AFTER SUMMER LAY-UP

With the winter heating season coming upon us, it's a good time to reconsider steps that need to be taken prior to starting boilers after a lay-up period. While this list of not all-inclusive, it can serve as a guide for those responsible for boiler operation.

Before a boiler is placed in operation, building operators and other responsible and/or certified personnel must check over the entire system and carefully review operating procedures.

Operating Manuals

All manufacturers of boilers supply operating manuals with their equipment. Unfortunately, many heating plants do not have manuals

and operating instructions available. These manuals have either been lost or misplaced. It is the responsibility of the owner or person in charge to obtain these publications and see that they are read, understood, followed and available in the heating plant.

Maintenance During Summer Lay-up

The summer shutdown period is a good time to accomplish necessary boiler and fuel burning system preventive maintenance. A suggested check list of such maintenance follows:

Employment Opportunities

Visit the ABSA Internet e-mail address for current ABSA job opportunities.

- Drain and flush the boiler, open all handholes and manholes, clean and remove soot and scale from the firesides. Examine the boiler for damage and corrosion.
- Have the boiler inspected by an authorized inspector, as required.
- Install new gaskets, replace all handhole and manhole covers, refill boiler and perform a hydrostatic test, if required.
- Institute a suitable boiler water treatment program to reduce scale buildup and corrosion.
- Have the fuel burning equipment cleaned and adjusted by a competent service technician. Verify operation of all operating and limit controls, interlocks, shutoffs and gauges. Have the technician disassemble the low water cutoff and water feeding devices, clean, recondition and reassemble them. Have the technician leak test all fuel safety shutoff valves.
- Lubricate all mechanical equipment such as fans and pumps, verify motor rotation and operation.
- Check all boiler piping for leaks and missing insulation.
- Make sure provision is made for establishing and maintaining a boiler log.
- Ensure Building Operator certification is current.

Start-up Checks

Immediately prior to boiler start-up perform the following:

- Verify boiler room is clean.
- Check that all ventilation and combustion air openings and louvers are clean and free of debris.
- Verify boiler water level.
- Check that all stack dampers are open.
- Examine the boiler furnace for foreign material.
- Check the furnace and flue passes for fuel accumulation.
- Make sure the manual fuel valves are open.

Normal Start-up

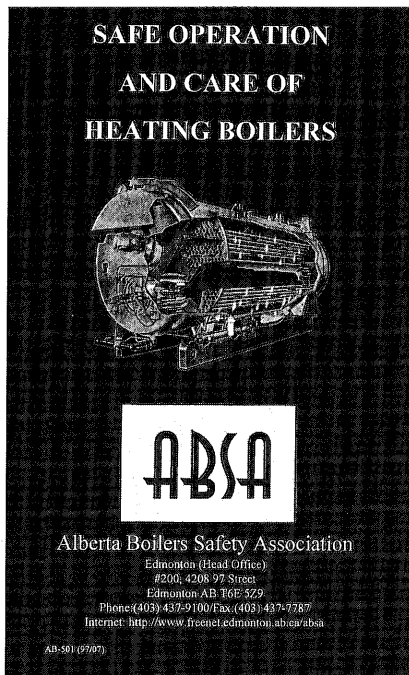
After completing the pre-starting checks, close the operating switch and commence the normal starting sequence as recommended by the manufacturer.

- Check that boiler cuts-in and cuts-out at the correct pressures and temperatures.
- Operate the safety relief valve(s)

manually by means of the hand lifting lever when boiler pressure is 75% of valve set pressure.

- Check for evidence of soot, smoke and condition of flame.
- Test flame detection devices.
- Test low water fuel cut-off.

Note: For a copy of AB-501 "Safe Operation and Care of Heating Boilers", please contact ABSA at any one of the numbers at right.



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 #203, 10109 - 97 Avenue
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 Tel (403) 538-9922
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 3rd Floor, 200 - 5 Avenue South
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 Tel (403)381-5423
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 Main Fl., 346 - 3rd Street S.E.
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 #402, 4406 Gaetz Avenue
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 Tel (403) 341-6677
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 Room 407, 5025 - 49 Avenue
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