

## Autoclaves, Boilers and Pressure Vessels

**Effective: September 2000**

---

**Vice-President,  
Finance and Administration**

### **Applicable Legislation:**

*Boilers and Pressure Vessels Act, R.R.O. 1990*

*O.Reg. 851, R.R.O. 1990, Industrial Establishments, Sections 62, 67-71*

### **Relevant Standards:**

Canadian Standards Association (CSA): *ASME-BPVC, 1998: Boiler and Pressure Vessel Code*

American National Standards Institute/American Society of Mechanical Engineers  
(ANSI/ASME): *Boiler and Pressure Vessels Code*

**Intent:** To outline University requirements for the installation, maintenance, and decommissioning of pressure vessels and autoclaves as specified under the *Ontario Boilers and Pressure Vessels Act (BPVA)*.

### **Definitions:**

*autoclave* a sterilizer using high pressure steam.

*boiler* a fired vessel in which gas or vapour may be generated or a gas vapour or liquid may be put under pressure by heating and includes any pipe, fitting or other equipment attached to or used in connection with the vessel.

*pressure* force applied to or distributed over a surface, measured above the prevailing atmospheric pressure, e.g. kilopascals or pounds per square inch (psi).

*pressure vessel* an unfired vessel that may be used for containing, storing, distributing, transferring, distilling, or processing any gas, vapour or liquid under pressure, and includes any pipe, fitting and other equipment attached to or used in connection with the vessel.

*qualified person* a person who, in respect of a specified duty, is qualified by knowledge, training and experienced to perform the duty safely and properly.

**Policy:**

1. The design, construction, installation, inspection, testing, operation and use of boilers and pressure vessels shall comply with the Ontario *Boilers and Pressure Vessels Act* (BPVA).
2. The University's Physical Resources shall be consulted about the installation, repair or decommissioning of autoclaves, boilers and pressure vessels.
3. The installation, repair or decommissioning of autoclaves, boilers and pressure vessels shall also be reported to Environmental Health and Safety.
4. Every autoclave, boiler and pressure vessel shall have at least one safety or other equivalent fitting to relieve pressure at or below the vessel's maximum allowable working pressure.
5. All pressure vessels shall be inspected for insurance and safety purposes after installation, at prescribed frequencies, and after any welding, alterations, repair or relocation. (Consult Environmental Health and Safety for advice.)
6. Inspection certificates issued by the insurer and/or by the Ministry of Consumer and Commercial Relations shall be posted in a conspicuous place near the autoclave boiler or pressure vessel.
7. No person shall operate or use, or permit to be operated or used, an autoclave, boiler or pressure vessel unless it has been inspected by a qualified inspector and a certificate of inspection has been issued, and the operator has been trained and qualified.
8. Persons operating autoclaves and other pressure vessels shall be trained in safe operating procedures. Records of the authorized users shall be maintained by the workplace supervisor.
9. Autoclaves, boilers, and pressure vessels shall be maintained and repaired by qualified persons. Where, in the course of such maintenance and repairs, an employee is required to enter a boiler or pressure vessel, the requirements of Safety [Policy 851.06.02](#), Confined Space Management Programs, shall be fulfilled.
10. No person shall operate an autoclave, boiler or pressure vessel at a pressure higher than its maximum allowable pressure.
11. Quality control programs for sterility assurance for each autoclave shall be implemented by the workplace supervisor.

**Guidelines:**

Inspections pursuant to requirements under the *Boiler and Pressure Vessels Act* are mandated for vessels having a volume greater than 1.5 ft<sup>3</sup> and operated at gauge pressures greater than 15 psi. Section 2 of the Act summarizes specific exemptions. Inspection certificates must be posted in the workplace near the pressure vessels.

**Reference**

National Safety Council (NSC) Data Sheet:

1-678-Rev-85: *Pressure Vessels and Pressure Systems in the Research and Development Lab*

**Further Information**

Further information about boiler and pressure vessel safety may be obtained from the web site of the Technical Standards and Safety Authority (TSSA) [www.tssa.org](http://www.tssa.org).