



Boiler & Pressure Vessel

Syllabus

for

Oil well Boiler Operator

Certificate of Qualification Examination

**Boiler & Pressure Vessel
Syllabus for the Oil Well Boiler Operator's Certificate Examination**

Prerequisites to obtain an Oil well Boiler Operator Certificate of Qualification

An applicant for an oil well boiler operator certificate must

- (a) be employed at, and have experience in the operation of, an oil well plant for a period of not less than 30 days;
- (b) have successfully completed an oil well boiler operator's course that has been approved by a Provincial Safety Manager; and
- (c) have passed the oil well boiler operator certificate of qualification examination.

What an oil well boiler operator may do

The holder of an oil well boiler operator certificate of qualification may operate an oil well boiler for the holder of a boiler operating permit.

Application to Undertake Examination

Applications and fees must be received and approved before the registration cut-off date in order to reserve an exam date, subject to seating availability. (Please refer to the examination schedule located on our web site @www.safetyauthority.ca)

The Examination consists of one multiple choice paper of 100 questions and 3 hour duration.

The Candidate is allowed to bring the following items into the Examination room:

- Safety Standards Act and Power Engineers, Boiler, Pressure Vessel And Refrigeration Safety Regulation;
- CSA B51 Boiler, Pressure Vessel, and Pressure Piping Code; and
- A non-programmable calculator.

Note: The items referenced above are the responsibility of the candidate and must be shown to the Examiner for approval. No other reference material will be allowed. The candidate must show picture I.D. at the examination.

Pass Mark

Oil well boiler operator candidates are required to obtain 65% minimum grade in order to receive a passing mark.

Subject Areas of study

1. B.C. Boiler and Pressure Vessel Safety Legislation:
 - 1.1 Knowledge of the Safety Standards Act and Power Engineers, Boiler, Pressure Vessel And Refrigeration Safety Regulation applicable sections;
 - 1.2 Responsibilities of oil well boiler operator certificate holder;
 - 1.3 Responsibility to report any accident and incidents;

<i>Note: Provision of appropriate WCB & WHMIS training is the responsibility of the employer.</i>

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- 1.4 CSA B51 general code knowledge; and
 - 1.5 Log books and records, why signed and dated, and their use.
2. Description of Boilers:
- 2.1 Horizontal furnace type boiler, including package boiler;
 - 2.2 Locomotive type boiler;
 - 2.3 Methods and purpose of staying flat boiler surfaces;
 - 2.4 Definitions of the terms: one-pass, two-pass, three-pass, and four pass with reference to the horizontal furnace boiler; and
 - 2.5 Materials of construction.
3. Fittings:
- 3.1 Knowledge of how fittings are installed in order to comply with the Regulations;
 - 3.2 Thorough knowledge of construction of gauge glass and water column; and
 - 3.3 Understanding the purpose of operation of all fittings (including safety valves and all automatic controls such as low-water fuel cut off, high pressure limit control, and flame failure device).
4. Combustion:
- 4.1 Working knowledge of fuels and combustion equipment and controls;
 - 4.2 Thorough knowledge of methods of lighting gas and oil-fired boilers;
 - 4.3 Methods of cleaning oil and gas burners;
 - 4.4 Requirements for proper combustion of fuels; and
 - 4.5 Causes of furnace explosions.
5. Operation and Maintenance of Boilers:
- 5.1 Lighting up procedure for oil firing;
 - 5.2 Lighting up procedure for gas firing;
 - 5.3 Elementary knowledge of boiler water treatment, causes of corrosion, causes of scale accumulation, blow down control, washing frequency;
 - 5.4 Working knowledge of feed water pumps and injectors;
 - 5.5 Thorough knowledge of method of proving water gauge and column to indicate correct level in boiler;
 - 5.6 Thorough knowledge of testing the low-water fuel cut-off and safety valves; and
 - 5.7 Principle of operation of a programmed control on an automatic packaged type boiler.
6. Fire Prevention and Plant Safety:
- 6.1 Knowledge of fire fighting equipment;
 - 6.2 Safe storage of flammable materials;
 - 6.3 Good housekeeping rules applicable to boiler room operation;
 - 6.4 Responsibilities of a plant safety committee; and
 - 6.5 Oil well boiler plant safety procedures.

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