



What Every Boiler Operator Should Know

By no means is the following intended to include everything an operator could or should know, but simply the basics that every operator should know – regardless of what classification level of certification they have.

- How to explain the function of all the controls of a typical boiler and specifically those at your site. (We do not want people to push buttons and flip switches without knowing the consequences.)
- Have knowledge of the auxiliary equipment that is associated with your specific boiler.
- What happens if the boiler was allowed to operate below the lowest permissible water level.
- All the possible ways of feeding water to a boiler.
- The consequences of having the water level too high.
- How to blow down in a safe manner (bottom, surface, column, low water cut-off).
- How to start a boiler and shut it off safely.
- How to put two boilers on the line (Class IV and higher).
- The local ordinance and basic physics principles.
- That, based on incident statistics, low water cut-offs are the most important safety device on a boiler.
- That, based on incident statistics, by properly maintaining your low water cut-off device(s), you will significantly reduce the potential for an incident.
- How a float-type and probe-type low water cut-off works. You should have the manufacturer's instructions for testing and maintaining the low water cut-off(s) on your boiler.
- How to perform a slow drain test, commonly known as evaporative test, on a low water cut-off (emphasis on steam boilers).
- How to perform a quick drain test on a low water cut-off.
- What to do if a boiler is found in a low water condition (no water in the gage glass, etc.).



- How to shut off (isolate) the gas supply to the boiler (gas fired boilers).
- How to shut off electrical power to a boiler.
- How to test the safety or relief valves on a boiler.
- Be familiar with all the maintenance items recommended by the manufacturer and be capable of performing them or arranging for them to be professionally performed.
- Where the boiler safety valve discharge and boiler blow-down piping terminates. (Is it in a safe location?)
- How to test the pressure switches on a steam boiler.
- How to test the temperature switches on a hot water/hydronic boiler.
- How and when to blow-down a boiler and the differences between blowing down a stand-alone boiler and a boiler on a header.
- Where the venting (e.g. vent connectors, smoke stack, chimney) for a boiler terminates.
- Where the combustion air for a boiler comes from (and is the opening still clear/unobstructed).
- How to test a sight glass (gage glass) to ensure that is unobstructed and indicating the correct water level in the boiler.
- When your operator's certificate expires and who to call with certification questions.
- That you NEVER bypass, jumper, or otherwise disable a boiler control or safety device.
- That you must report all accidents causing damage to a boiler even if the boiler was not the cause of the accident.
- That you must not disturb an accident scene unless your actions are related to saving lives, preventing injury or preventing further damage (e.g. extinguishing a fire, shutting off fuel or electrical power, etc.) until the scene is released by the jurisdictional boiler inspector.
- That it is illegal to knowingly operate an unsafe boiler.

Note: For the purposes of this document, the terms "incident" and "accident" are used interchangeably.