

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 grade of license they have.

1. How to explain the function of all the controls of a typical boiler (we do not want people to push buttons and flip switches without knowing the consequences).
2. What happens if the boiler was allowed to operate below the lowest permissible water level.
3. All the possible ways of feeding water to a boiler.
4. The consequences of having the water level too high.
5. How to blow down in a safe manner (bottom, surface, column, low water cut off).
6. How to start a boiler and shut it off safely.
7. How to put two boilers on the line (Grade IV and higher)
8. The local ordinance and basic physics principles.
9. That, based on incident statistics, low water cut offs are the most important device on a boiler and the most often neglected.
10. That, based on incident statistics, by properly maintaining your low water cut off device(s), you'll reduce the potential for an incident by 40%
11. 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 cutoff(s) on your boiler.
12. How to perform a slow drain test on a low water cutoff (emphasis on steam boilers).
13. How to perform a quick drain test on a low water cutoff.
14. What to do if a boiler is found in a low water condition (no water in the gage glass, etc.).
15. How to shut off (isolate) the gas supply to the boiler (gas fired boilers).
16. How to shut off electrical power to a boiler.
17. How to test the safety or relief valves on a boiler.
18. Be familiar with all the maintenance items recommended by the manufacturer and be capable of performing them or have made arrangements to have them professionally performed.
19. Where the boiler safety valve discharge and boiler blow down piping terminates (is it a safe location?)
20. How to test the pressure switches on a steam boiler.
21. How to test the temperature switches on a hot water/hydronic boiler.
22. How and when to blow down a boiler.
23. Where the venting (vent connectors, smoke stack, chimney) for a boiler terminates.
24. Where the combustion air for a boiler comes from (and is the opening still clear/unobstructed).
25. How to test a sight glass (gage glass) to ensure that it is unobstructed and indicating the correct water level in the boiler.
26. The telephone number for your boiler inspector

27. The telephone number of your Boiler Supervisor (in Seattle, as applicable)
28. When your operators license expires and who to call for licensing questions.
29. That you NEVER bypass, jumper, or otherwise disable a boiler control or safety device.
30. That you must report all accidents causing damage to a boiler even if the boiler was not the cause of the accident.
31. That you must not disturb an accident scene unless your actions are related to saving lives, preventing injury or preventing further damage (such as extinguishing a fire, shutting off fuel or electrical power, etc.) until the scene is released by the jurisdictional Boiler Inspector.

Note: For the purposes of this page, the terms "incident" and "accident" are interchangeable.