

Boiler Operator “Need To Know” Items

With the responsibility for the operation of a boiler comes the added responsibility for possessing an adequate understanding of the boiler, its appurtenances, supporting systems, and any state or local regulations that may apply to that boiler. Whether licensed or not, every boiler operator should know the following basic items as they pertain to the boiler or boilers that they are responsible for operating.

1. How to explain the function of all the controls that may be on a typical boiler. No one should be asked to push buttons, flip switches and operate valves if they do not fully understand the consequences of their actions.
2. What constitutes “low water” in their boiler and what are the possible results of allowing a boiler to operate in this condition.
3. What methods of supplying feedwater are there for your boiler and how many are required by state law.
4. What constitutes “high water” in a boiler and what are the possible results of allowing a boiler to operate in this condition.
5. How to perform the following in a safe manner:
 - a. Boiler bottom blowdown
 - b. Boiler surface blowdown
 - c. Water column blowdown
 - d. Low water fuel cut off float chamber blowdown
6. It’s not enough to know how to do the various blowdowns of a boiler, the operator must also know when each should be performed.
7. How to properly and safely start and stop the boilers at their facility.
8. How float and probe-type low water cut off devices work.
9. How to perform a slow drain test of the low water cut off device on a steam boiler.
10. What should the operator do if they find a boiler operating with no water level visible in the sight glass. We’re looking for what you should do before you start running.
11. How to secure (isolate) the gas supply to their boiler.
12. How to secure electrical power to their boiler.
13. What are the manufacturers instructions for testing the pressure controls on their boiler.

14. What are the manufacturer's instruction for testing the temperature controls on their boiler.
15. Where do the various vents (fuel system components, exhaust gas, etc.) from their boiler terminate.
16. Where does the supply of combustion air for their boiler come from.
17. How to test the sight glass on a steam boiler to ensure that it is unobstructed and indicating the correct water level in the boiler.
18. How to test the safety or safety relief valve or valves on a boiler.
19. Where the boiler safety valve discharge and boiler blowdown piping terminates and if these can be considered to be safe termination points.
20. 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.
21. The telephone number of your boiler inspector.
22. The telephone number of the Chief Boiler Inspector
23. That you NEVER bypass, jumper, or otherwise disable, modify or alter a boiler control or safety device.
24. The requirements of the Oklahoma Boiler and Pressure Vessel Safety Act as they pertain to the boilers which they operate and where to get a copy for their use. Hint, it can be found at the web site of the Oklahoma Department of Labor at www.labor.ok.gov.
25. Who to notify if the boiler is damaged in an accident, even if the boiler was not the cause of the accident, such as fire or flooding.
26. 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.
27. What cautions and warnings are contained in the Manufacturer's Installation and Operation Manual for the boiler(s) at your facility.
28. What are the manufacturer's recommended boiler water chemical limits for the boiler(s) that they operate and how is each measured parameter controlled (raised and lowered).
29. What effect does improper boiler water chemistry have on a boiler.