Engineer Tasks Associated with Boiler Operation

Steam Heating Boiler

1. Type of boiler (fire tube, water tube, cast iron, electric)
2. Boiler Draft
    a. Natural, forced, induced
    b. Make-up air
3. Fuel systems gas, oil, etc.
    a. Components
    b. Operation
4. Feed water system
    a. Components
    b. Operation
5. Burner Type and Operation
    a. Atmospheric, Power burner
6. Condensate Return System
7. Boiler Operation
    a. Start-up
    b. Shutdown
    c. Normal Operation
        i. Boiler Room checks
        ii. Log book
        iii. Blown down, water column or gage glass
        iv. Test low water fuel cutoff
        v. Safety valve
8. Emergency controls
    a. Boiler shut down switch
    b. Low water fuel cutoff
    c. High pressure limit
    d. Flame scanner/ Thermocouple
9. License posting
10. Water testing and treatment
11. Lockout tag out (where, when, why).
12. When to add feed water.
13. When not to add feed water.
14. Attendance and Horsepower Rating
15. Walk trough of plant (what to look for, water level, leaks, and any abnormal conditions)
16. Boiler Efficiency

Hot Water Heating Boiler

1. Type of boiler (fire tube, water tube, cast iron, electric)
2. Boiler Draft
    a. Natural, forced, induced
    b. Make-up air
3. Fuel systems gas, oil, etc.
    a. Components
    b. Operation
4. Make up water system
    a. Components
    b. Operation
5. Burner Type and Operation
        a. Atmospheric, Power burner
6. Condensate Return System
7. Boiler Operation
        a. Start-up
        b. Shutdown
        c. Normal Operation
            1. Daily checks
            2. Blown down
            3. Log book
            4. Test low water fuel cutoff
            5. Safety valve
8. Emergency controls
        a. Boiler shut down switch
        b. Low water fuel cutoff
        c. High Temperature limit
        d. Flame scanner/ Thermocouple
9. License posting
10. Water testing and treatment
11. Lockout tag out (where, when, why).
12. When to add make up water.
13. Attendance and Horsepower Rating
14. Walk trough of plant (what to look for, water level, leaks, and any abnormal conditions)
15. Boiler Efficiency