

	A	B	C
1	License Number: _____ Name: _____		
2	Safe Steam Solutions (Operation Testing Auditing)	T	F
3	Safety is a mindset. A product of personal dedication		
4	Fire danger is a CSD 1 major peril		
5	Accidents are caused by complacency due to long periods of trouble free operation		
6	The qualified individual performing tests shall be familiar with all precautions		
7	When you enter a steam plant verbally remind yourself to be alert		
8	Inattentional blindness can affect the best professional in all fields		
9	Only boilers over 400,000 btu input require emergency shut-down switches		
10	Safe operation of boilers ensures that the controls prove to operate according to design		
11	The goal of every safety program is to minimize the risk associated with boiler operation		
12	Every system is unique and requires a set of safety rules that apply to specific operating parameters		
13	Safety hazards include pets or animals in the boiler room		
14	Safety is about how well the system performed yesterday		
15	How to avoid destroying a boiler: Leave it alone		
16	NOWL Normal operating water level helps keep the heating surfaces cool		
17	A McDonnell & Miller Series 157S LWCO float control maintains NOWL, operates pumps & burners		
18	Potential mechanical float LWCO issues include: Resistor is dirty or corroded		
19	Potential mechanical float LWCO issues include: Float ball is crushed		
20	How do you know the boiler might be overheating: No steam pressure in the boiler		
21	How do you know the boiler might be overheating: The boiler operator has left the building		
22	Boilers fly because the structural integrity of the pressure vessel has been compromised		
23	A burner can fire regardless of the boiler having any water content		
24	A boiler installed to code rules cannot dry-fire		
25	The operator knows a low water condition does not exist because the alarm is not blaring		
26	To prevent boiler dry firing test pumps and controls for adequate flow discharge pressure operation		
27	Additional ways to prevent boiler dry firing is to use a remote ambient temperature control		
28	Emergency: Feedwater pump cannot supply sufficient water to keep the boiler at its NOWL		
29	High water level can cause floats to stick, remain in place, and not turn pumps on when needed		
30	Calcium magnesium and water hardness in not an issue raw water		
31	A water softener is an ion exchange system		
32	Always treat water per the manufacturers recommendations.		
33	Chemical can also be used to remove dissolved solids from water		
34	Heat promotes removal of dissolved oxgen in water. The warmer the less dissolved oxygen is held		
35	Always keep water PH levels below the alkalinity scale		
36	PH 7 is neutral. Distilled water		
37	When a burner is unloaded, there is no steam demand, although the burner keeps firing		
38	Whan a burner is over loaded it cannot add enough heat energy to maintain desired steam pressure		
39	Water at 1 mile high boils at 202 degrees F.		
40	Pressure determines boiling temperature		
41	Saturated water and saturated steam have the exact same temperature		
42	Pressure is not subtle		
43	The goal of every steam system is to maintain a steady state or balanced system pressure		
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46	Safe Steam Solutions PAGE 2		
47	Over-Pressured: Operation above the safety valve set point		
48	Steam purity refers to the amount of solids, liquid or vaporous contamination in the steam		
49	Steam quality has to do with the amount of moisture in the steam		
50	Impurities and total dissolved solids increases the surface tension of boiler water		
51	Rapid fluctuations of water level in the sight glass is not due to high surface tension		
52	Typical Firetube boiler "Total Dissolved Solids" TDS is 5000 to 6500		
53	High TDS affect steam purity		
54	When you know the temperature and the system pressure you can find the % of air with a chart		
55	Y-Strainers improve steam purity		
56	Water droplets in high velocity steam can be as abrasive as sand particles		
57	Steam Quality: 2% moisture content is considered dry saturated steam		
58	Moisture does not affect steam heating value		
59	Steam separators removes moisture and promotes dry steam		
60	Steam traps also help keep steam dry by removing condensate from steam piping		
61	2.31 ft of water column equals 1 psig		
62	Power boiler safety valves require a "V" stamp		
63	Power boiler safety valve piping is allowed to discharge inside of the building		
64	Mother nature will not allow water to exist as a liquid above 212 degrees F. (Sea level atmosphere)		
65	The ability of a pressure vessel to resist stress maintain structural integrity is based upon PSI-Temp		
66	The melting point of steel is 2370-2550. Steel begin to melt and break down.		
67	The 2024 Oregon boiler and pressure vessel specialty code anticipated adoption date: Oct. 1, 2024		
68	The OBPVSC contains 25 total code volumes...		
69	The purpose of the Oregon adopted boiler law is to protect property in Oregon		
70	ASME Section 1 code stamps include A, S, M, E, PP		
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74	Email completed test to Tim.radiantrealities@gmail.com		
75	<i>8 CE hours will be submitted to the State of Oregon BCD accordingly</i>		
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77	Certificate of completion will be emailed to confirm receipt of successful test		