

	A	B	C	D
1	License Number: _____ Name: _____			
2	2021 ASME CSD-1 Controls and Safety Devices (Page 1 of 2)	T	F	
3	The 2024 OBPVSC (Oregon boiler and pressure vessel specialty code) is law as of October 1, 2024			3
4	The 2024 OBPVSC includes Oregon OSHA hazard prevention and health rules			4
5	The 2024 OBPVSC includes the 2023 Edition of ASME B31.9 Building service piping code			5
6	The 2021 ASME CSD-1 code now sets rules for boilers up to 400 hp			6
7	ASME CSD-1 has five primary sections			7
8	The State of Oregon has adopted all five CSD-1 sections into State law			8
9	ASME code rules are not law unless adopted into the laws of a state government			9
10	Accidents are caused by complacency due to long periods of trouble free operation			10
11	CG-110 Scope sets rules regarding, purchase installation maintenance and operation of controls			11
12	CG-110 Scope: Boilers directly fired with gas, oil, electricity and bio-mass fuels			12
13	CG-130 Exclusions: Boilers with fuel input ratings greater than or equal to 12,500,000 btu/hr			13
14	Boilers having inputs of 400,000 btu/hr or less are exempt from CSD-1 section CF rules			14
15	Boilers must be labeled and listed by a national recognized testing agency			15
16	It shall be the responsibility of the jurisdiction to define the application of the CSD-1 standard			16
17	Installation of controls safety devices and burners shall be in accordance with manufacturers instructions			17
18	Fans supplying air to the boiler room for combustion shall be interlocked with the burner & proven			18
19	It is the installing contractors responsibility to test controls and provide detailed report to owners			19
20	Operation of all safety devices depends upon their ability to respond to their activating impulses			20
21	A disconnection means capable of being locked in the open position shall be installed at the boiler			21
22	A manually operated remote shutdown switch shall be located just outside the boiler room door			22
23	The low water fuel cut-off shall have a pressure rating equal to the MAWP of the boiler			23
24	Typically at least one automatic fuel cut off is required for high pressure steam boilers above 100 psi			24
25	Two operating pressure controls are required for all steam boilers			25
26	One high limit pressure control with manual reset is required for all steam boilers			26
27	CW-400 One temperature operating control is required for hot water boilers			27
28	Safety valves above 15 psi set pressure require drip pan elbows and to be vented outside the bldg.			28
29	Boilers with over 400 square foot of heating surface require two safety valves or more			29
30	Safety valve "blowdown" or valve closing requirements for power boilers is 7% maximum			30
31	Vacuum boilers: Each boiler shall have a properly sized safety valve. The valve shall have no test lever			31
32	Boilers under 400,000 btu input are exempt from "CF" (Controls fuel) combustion requirements			32
33	Three CF divisions: 400MBH to 2500MBH and 2500MBH to 5000MBH and 5000MBH to 12500MBH input			33
34	Gas supply piping to gas controls require a 6" minimum sediment trap at the entrance to the gas train			34
35	Regulator outlet gas pressure shall be within + or – 10% of the regulating set point at all firing rates			35
36	CF-161 Overpressure protection refers to protecting downstream controls			36
37	Gas pressure supervision controls monitor gas pressure			37
38	All high and low gas pressure switches require manual reset features and must be vented to atmosphere			38
39	Devices requiring atmospheric pressure to balance a diaphragm must be vented outdoors by the installer			39
40	CF-190 covers vent lines, bleed lines, gas pressure relief and vent valve lines for fuel train components			40
41	Preignition purging of the combustion chamber is required on all power gas and mechanical draft burners			41
42	Loss of combustion air shall result in safety shutdown and lockout for all burners above 400,000 btu input			42
43	A maximum input at ignition up to 2,500,000 Btu/hr is allowed by CF-320 ignition devices			43
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46	2021 ASME CSD-1 Controls and Safety Devices (Page 2 of 2)	T	F	
47	Fuel trains less than 2,500,000 btu input- ignited by pilots do not require high & low gas pressure switches			47
48	Fuel trains less than 2,500,000 btu input- direct ignited requir high & low gas pressure switches			48
49	Typical gas fuel trains above 5,000,000 btu/hr input require two safety shutoff valves one with POC			49
50	Gas burners smaller than 400,000 btu/hr input- purging not required except for pulse combustion ignition			50
51	Gas burners smaller than 400,000 btu/hr input- pilot flame-establishing period is 30 seconds maximum			51
52	Gas burners smaller than 400,000 btu/hr input- action on main flame failure: shutdown & 1 relight attempt			52
53	Gas burners 400MBH to 2500MBH input: Pilot flame establishing period: 15 seconds			53
54	Gas burners 400MBH to 2500MBH input: Action on flame failure: Shutdown, lockout or recycle once			54
55	Gas burners 400MBH to 2500MBH input: Action on power interruption: Manual reset required			55
56	Gas burners 400MBH to 2500MBH input: Action on loss of combustion air: Safety shutdown and lockout			56
57	Gas burners 400MBH to 2500MBH input: Proven low fire start: Not required			57
58	Gas burners 2500MBH to 5000MBH input: Action on loss of combustion air: Safety shutdown and lockout			58
59	Gas burners 2500MBH to 5000MBH input: Intermittent pilot type not permitted			59
60	Gas burners 2500MBH to 5000MBH input: Flame failure response time: 4 seconds maximum			60
61	Gas burners 2500MBH to 5000MBH input: Valve closing time: 1 second maximum			61
62	Gas burners 5000MBH to 12500MBH input: Intermittent pilot type not permitted			62
63	Gas burners 5000MBH to 12500MBH input: Valve closing time 4 seconds maximum			63
64	Gas burners 5000MBH to 12500MBH input: Flame failure response time 1 second			64
65	Safety controls: Oil fired burners are rated by 3gph to 20 gph and over 20 gallons per hour firing rates			65
66	Low fire start controls are required on all gas and oil burners having inputs above 2,500,000 btu/hr			66
67	Daily, weekly, monthly, semi-annual, annual, and as required maintenance lists are included in CSD-1			67
68	Daily check gages, monitors, indicators and burner flame			68
69	Weekly check flame signal strength, firing rate control and make aural and visual checks of all fuel valves			69
70	Monthy check flue, stack or outlet dampers. Test gas and oil pressure interlocks			70
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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			