

1					2	3	4	5 ^{Notes 1, 2}	6	7		11 ^{Note 4}	12				13				14		
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions		Shared (Y/N)	Process Connection				Materials of Construction						Comment
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. [°C]	Press. [kPa(g)]		Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seal	Seat	Plug / Ball / Disc	Bonnet / Cap	
GO	12	150	CB	250	Ball Valve	ENS-NWPVR-PID-24006	Line 250-12-APCG-107	Process gas	Gas	38	1895	N	250	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL, FIRE-TESTED	CS (ASTM A105/A216 WCB)	-
GO	12	151	CB	250	Ball Valve	ENS-NWPVR-PID-24006	Line 250-12-APCG-107	Process gas	Gas	38	1895	N	250	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL, FIRE-TESTED	CS (ASTM A105/A216 WCB)	-
GO	12	152	CB	250	Ball Valve	ENS-NWPVR-PID-24006	Line 250-12-APCG-108	Process gas	Gas	38	1895	N	250	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL, FIRE-TESTED	CS (ASTM A105/A216 WCB)	-
GO	12	153	CB	250	Ball Valve	ENS-NWPVR-PID-24006	Line 250-12-APCG-108	Process gas	Gas	38	1965	N	250	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL, FIRE-TESTED	CS (ASTM A105/A216 WCB)	-
NH	12	155	SG	15	Globe valve	ENS-NWPVR-PID-24006	Line 15-13-NHVP-007	Nitrogen	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/316L)	316 SS, HARDFACE SEAT, API 602 TRIM #12	CORROSION-INHIBITED, DIE-FORMED FLEXIBLE GRAPHITE with ANTI-EXTRUSION RINGS	316 SS, HARDFACE SEAT	Disc	SS (ASTM A182-F316/316L)	-
1					2	3	4	5 ^{Notes 1, 2}	6	7		11 ^{Note 4}	12				13				14		
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions		Shared (Y/N)	Process Connection				Materials of Construction						Comment
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. [°C]	Press. [kPa(g)]		Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seal	Seat	Plug / Ball / Disc	Bonnet / Cap	
GA	13	013	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line 15-13-GAVP-010	Argon	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	304SS	PTFE	PTFE	BALL	304SS	Dead-man valve
GA	13	014	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line 15-13-GAVP-010	Argon	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	304SS	PTFE	PTFE	BALL	304SS	-
GA	13	015	SU	15	Non-return valve	ENS-NWPVR-PID-24004	Line 15-13-GAVP-010	Argon	Gas	38	24820	N	16	SW	ASME B16.11	1500#	SS, ASTM A182-F304/304L, ASME B16.7	316 SS	316 SS	316 SS, HARDFACE SEAT	BALL	SS, ASTM A182-F304/304L, ASME B16.7	-
NH	13	018	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-011	Nitrogen	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	316 SS	316 SS	316 SS, HARDFACE SEAT	BALL	316 SS	-
NH	13	019	SU	15	Non-return valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-011	Nitrogen	Gas	38	24820	N	15	SW	ASME B16.11	1500#	SS (ASTM A182-F316/316L)	SS (ASTM A182-F316/316L)	316 SS	316 SS, HARDFACE SEAT	PLUG	SS (ASTM A182-F316/316L)	Lift Check Valve
NH	13	021	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line XX-13-NHVP-014	Nitrogen	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	316 SS	316 SS	316 SS, HARDFACE SEAT	BALL	316 SS	Dead-man valve

NH	13	022	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-007	Nitrogen	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	316 SS	316 SS	316 SS, HARDFACE SEAT	BALL	316 SS	-	
NH	13	023	SU	15	Non-return valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-007	Nitrogen	Gas	38	24820	N	15	SW	ASME B16.11	1500#	SS (ASTM A182-F316/316L)	SS (ASTM A182-F316/316L)	316 SS	316 SS, HARDFACE SEAT	PLUG	SS (ASTM A182-F316/316L)	Lift Check Valve	
NH	13	024	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-008	Nitrogen	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	316 SS	316 SS	316 SS, HARDFACE SEAT	BALL	316 SS	-	
NH	13	025	SU	15	Non-return valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-008	Nitrogen	Gas	38	24820	N	15	SW	ASME B16.11	1500#	SS (ASTM A182-F316/316L)	SS (ASTM A182-F316/316L)	316 SS	316 SS, HARDFACE SEAT	PLUG	SS (ASTM A182-F316/316L)	Lift Check Valve	
NH	13	026	SB	15	Ball valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-009	Nitrogen	Gas	38	24820	N	15	SW	SS, ASTM A182-F304/304L, ASME B16.5	1500#	316 SS	316 SS	316 SS	316 SS, HARDFACE SEAT	BALL	316 SS	-	
NH	13	027	SU	15	Non-return valve	ENS-NWPVR-PID-24004	Line 15-13-NHVP-009	Nitrogen	Gas	38	24820	N	15	SW	ASME B16.11	1500#	SS (ASTM A182-F316/316L)	SS (ASTM A182-F316/316L)	316 SS	316 SS, HARDFACE SEAT	PLUG	SS (ASTM A182-F316/316L)	Lift Check Valve	
GS	13	036	SB	25	Ball valve	ENS-NWPVR-PID-24004	Line from Oxygen cylinder vendor package to F1307	Oxygen	Gas	38	24820	N	25	RF	SS, ASTM A182-F304/304L, ASME B16.5	1500#	SS, ASTM A182-F316/316L, ASME B16.5	SS, ASTM A182-F316/316L, ASME B16.5	PTFE	316 SS	BALL	SS, ASTM A182-F316/316L, ASME B16.5	-	
GS	13	039	SB	25	Ball valve	ENS-NWPVR-PID-24004	Line XX-13-GSVP-015	Oxygen	Gas	38	24820	N	25	RF	SS, ASTM A182-F304/304L, ASME B16.5	1500#	SS, ASTM A182-F316/316L, ASME B16.5	SS, ASTM A182-F316/316L, ASME B16.5	PTFE	316 SS	BALL	SS, ASTM A182-F316/316L, ASME B16.5	Dead-man valve	
GS	13	040	SB	25	Ball valve	ENS-NWPVR-PID-24004	Line 25-13-GSVP-012	Oxygen	Gas	38	24820	N	25	RF	SS, ASTM A182-F304/304L, ASME B16.5	1500#	SS, ASTM A182-F316/316L, ASME B16.5	SS, ASTM A182-F316/316L, ASME B16.5	PTFE	316 SS	BALL	SS, ASTM A182-F316/316L, ASME B16.5	-	
GS	13	041	SU	25	Non-return valve	ENS-NWPVR-PID-24004	Line 25-13-GSVP-012	Oxygen	Gas	38	24820	N	25	SW	ASME B16.11	1500#	SS (ASTM A182-F316/316L)	SS (ASTM A182-F316/316L)	PTFE	316 SS, HARDFACE SEAT	PLUG	SS (ASTM A182-F316/316L)	Lift Check Valve	
GS	13	042	SU	25	Non-return valve	ENS-NWPVR-PID-24004	Line 25-13-GSVP-012	Oxygen	Gas	38	24820	N	25	SW	ASME B16.11	1500#	SS (ASTM A182-F316/316L)	SS (ASTM A182-F316/316L)	PTFE	316 SS, HARDFACE SEAT	PLUG	SS (ASTM A182-F316/316L)	Lift Check Valve	
1					2	3	4	5	Notes 1,2	6	7			11	Note 4	12				13				14
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions		Shared (Y/N)	Process Connection				Materials of Construction					Comment		
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. [°C]	Press. [kPa(g)]		Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seat	Seat	Plug / Ball / Disc		Bonnet / Cap	
WD	14	056	SB	40	Ball valve	ENS-NWPVR-PID-24005	Line 40-14-WDVP-016	Demin Water	Liquid	38	1895	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/A351-CF8M)	SS (ASTM A182-F316/A351-CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-	
WD	14	059	SB	15	Ball valve	ENS-NWPVR-PID-24005	Line 15-14-WDVP-019	Demin Water	Liquid	93	1585	N	15	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/A351-CF8M)	SS (ASTM A182-F316/A351-CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-	
WD	14	060	SB	15	Ball valve	ENS-NWPVR-PID-24005	Line 15-14-WDVP-020	Demin Water	Liquid	93	1585	N	15	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/A351-CF8M)	SS (ASTM A182-F316/A351-CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-	
WD	14	061	SB	40	Ball valve	ENS-NWPVR-PID-24005	Line 40-14-WDVP-021	Demin Water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/A351-CF8M)	SS (ASTM A182-F316/A351-CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-	
WD	14	138	SG	25	Globe valve	ENS-NWPVR-PID-24005	Line 40-14-WDVP-021	Demin Water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-	

WD	14	181	SG	15	Globe valve	ENS-NWPVR-PID-24005	Line 15-14-WDVP-019	Water	Liquid	93	1585	N	15	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
WD	14	182	SG	15	Globe valve	ENS-NWPVR-PID-24005	Line 15-14-WDVP-020	Water	Liquid	93	1585	N	15	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
AP	14	221	SF	XX	Damper	ENS-NWPVR-PID-24005	Secondary enclosure Y1411	Air	Gas	38	1965	Y	Note 3	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	SS	GRAPHITE	316 SS with PTFE	DISC (SS (ASTM A351-CF8M))	SS	Process ventilation pipeline and valve size to be determined during design of the HVAC system.
WD	14	225	SG	25	Globe valve	ENS-NWPVR-PID-24005	Line 25-14-WDVP-135	Demin water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
WD	14	226	SG	15	Globe valve	ENS-NWPVR-PID-24005	Line 15-14-WDVP-136	Demin water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
WD	14	227	SG	25	Globe valve	ENS-NWPVR-PID-24005	Line 25-14-WDVP-137	Demin water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
WD	14	228	SG	25	Globe valve	ENS-NWPVR-PID-24005	Line 25-14-WDVP-138	Demin water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
WD	14	229	SG	15	Globe valve	ENS-NWPVR-PID-24005	Line 15-14-WDVP-139	Demin water	Liquid	93	1585	N	40	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	316 SS	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
1					2	3	4	5 Notes 1, 2	6	7		11 Note 4	12				13					14	
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions		Shared (Y/N)	Process Connection				Materials of Construction					Comment	
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. (°C)	Press. [kPa(g)]		Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seat	Seat	Plug / Ball / Disc		Bonnet / Cap
KO	15	223	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-053	Spent Scrubbing Solution	Liquid	38	1895	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	224	SF	50	Damper	ENS-NWPVR-PID-24002	Line 50-15-GOVP-129	Spent Scrubbing Solution Vapours	Gas	38	1965	Y	50	RF	CS, ASTM A105, ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	SS	GRAPHITE	316 SS with PTFE	DISC (SS (ASTM A351-CF8M))	SS	-
KO	15	230	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-142	Spent Scrubbing Solution	Liquid	38	1895	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	231	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-116	Spent Scrubbing Solution	Liquid	38	1895	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
AI	15	232	CB	15	Ball valve	ENS-NWPVR-PID-24002	Line 15-17-AICX-084	Instrument air	Gas	38	1965	Y	15	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	BALL	CS	-

AI	15	233	CU	15	Non-return valve	ENS-NWPVR-PID-24002	Line 15-17-AICX-084	Instrument air	Gas	38	1965	Y	15	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	13 CR, HARDFACE SEAT, API 602 TRIM #8	PER API 602	-	Poppet (Piston)	CS	Lift Check Valve (Installation: HORIZONTAL with COVER UP)
KO	15	234	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-055	Spent Scrubbing Solution	Liquid	38	1895	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	235	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-140	Spent Scrubbing Solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	209	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-115	Spent Scrubbing Solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	Flexible graphite	RTFE	BALL	316 SS	-
GO	15	170	SB	1/4"	Ball valve	ENS-NWPVR-PID-24002	Sampling Point S07 (1/4"-15-GOVF-062)	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	Class 600	SS (ASTM A182-F316L/A351-CF3M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	171	SB	1/4"	Ball valve	ENS-NWPVR-PID-24002	Sampling Point S08 (1/4"-15-GOVF-063)	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	Class 600	SS (ASTM A182-F316L/A351-CF3M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	172	SB	1/4"	Ball valve	ENS-NWPVR-PID-24002	Sampling Point S09 (1/4"-15-GOVF-064)	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	Class 600	SS (ASTM A182-F316L/A351-CF3M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	173	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-102	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316L/A351-CF3M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	174	SU	25	Non-return valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-101	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	API 600 TRIM #10	API 600	-	SWING TYPE	316 SS	HORIZONTAL with COVER UP or VERTICAL with UPWARD FLOW
KO	15	178	SG	25	Globe valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-101	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	SUPPLIER TO ADVISE	DISC	316 SS	-
KO	15	147	SG	15	Globe valve	ENS-NWPVR-PID-24002	Sampling point S05	Spent Scrubbing Solution	Liquid	93	1585	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	SUPPLIER TO ADVISE	DISC	316 SS	-
GO	15	148	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-033	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-

GO	15	149	SB	100	Ball Valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-104	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	15	140	SG	25	Globe valve	ENS-NWPVR-PID-24002	Line 25-15-WDVP-032	Demin Water	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	SUPPLIER TO ADVISE	DISC	316 SS	-
KO	15	141	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-114	Spent Scrubbing Solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	142	SG	15	Globe valve	ENS-NWPVR-PID-24002	Sampling Point S04	Spent Scrubbing Solution	Liquid	38	1895	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	SUPPLIER TO ADVISE	DISC	316 SS	-
KO	15	144	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-115	Spent Scrubbing Solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	145	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-141	Spent Scrubbing Solution	Liquid	38	1895	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	146	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-115	Spent Scrubbing Solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	102	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-095	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	104	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-094	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	105	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-093	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	068	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-102	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	069	SV	40	Strainer	ENS-NWPVR-PID-24002	Line 25-15-KOVP-102	Aqueous KOH solution	Liquid	93	1585	Y	25	THRD	ASME B1.20.1	CLASS 150	SS (A351-CF8/A351-CF8M)	-	-	-	-	-	Y-Type Strainer, Screen - 304 or 316 stainless steel perforated or mesh screen
KO	15	071	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-100	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	072	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-099	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-

KO	15	073	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-100	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	074	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-099	Aqueous KOH solution	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	075	SB	15	Ball valve	ENS-NWPVR-PID-24002	Drain point before Scrubbing Liquid Cooler H1504	Aqueous KOH solution	Liquid	93	1585	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
KO	15	076	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-KOVP-029	Aqueous KOH solution	Liquid	93	1585	N	25	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/A351-CF8M)	SS (ASTM A182-F316/A351-CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
KO	15	077	SB	15	Ball valve	ENS-NWPVR-PID-24002	Line 15-15-KOVP-030	Aqueous KOH solution	Liquid	93	1585	N	15	RF	SS, ASTM A182-F304/304L, ASME B16.5	150#	SS (ASTM A182-F316/A351-CF8M)	SS (ASTM A182-F316/A351-CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182-F316/A351-CF8M)	-
KO	15	079	SG	15	Globe valve	ENS-NWPVR-PID-24002	Sampling point SO3	Aqueous KOH solution	Liquid	93	1585	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	SUPPLIER TO ADVISE	DISC	316 SS	-
WD	15	091	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-16-WDVP-042	Demin Water	Liquid	38	1895	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	15	092	SB	25	Ball valve	ENS-NWPVR-PID-24002	Line 25-15-WDVP-032	Demin Water	Liquid	93	1585	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	099	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-096	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	100	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-095	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
GO	15	101	SB	100	Ball valve	ENS-NWPVR-PID-24002	Line 100-15-GOVP-096	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ and H ₂ O	Gas	93	1585	Y	100	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
1					2	3	4	5 Notes 1,2	6	7			11 Note 4	12				13				14	
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions			Shared (Y/N)	Process Connection				Materials of Construction					Comment
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. (°C)	Press. [kPa(g)]	Size		Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seat	Seat	Plug / Ball / Disc	Bonnet / Cap	
WD	16	110	SB	25	Ball valve	ENS-NWPVR-PID-24003	Drain point on Primary Cooling Water Tank T1601	Demin Water	Liquid	38	1895	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	16	111	SB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WDVP-049	Demin Water	Liquid	38	1895	Y	80	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-

WD	16	112	SB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WDVP-050	Demin Water	Liquid	38	1895	Y	80	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	16	113	SB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WDVP-052	Demin Water	Liquid	38	1895	Y	80	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	16	114	SV	80	Strainer	ENS-NWPVR-PID-24003	80-16-WDVP-050	Demin Water	Liquid	38	1895	Y	80	THRD	ASME B1.20.1	CLASS 150	SS (A351-CF8/A351-CF8M)	-	-	-	-	-	Y-Type Strainer, Screen - 304 or 316 stainless steel perforated or mesh screen
WD	16	115	SV	80	Strainer	ENS-NWPVR-PID-24003	Line 80-16-WDVP-052	Demin Water	Liquid	38	1895	Y	80	THRD	ASME B1.20.1	CLASS 150	SS (A351-CF8/A351-CF8M)	-	-	-	-	-	Y-Type Strainer, Screen - 304 or 316 stainless steel perforated or mesh screen
WD	16	116	SU	50	Non-return valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-051	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	API 600 TRIM #10	API 600	-	SWING TYPE	SS	HORIZONTAL with COVER UP or VERTICAL with UPWARD FLOW
WD	16	117	SU	50	Non-return valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-092	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	API 600 TRIM #10	API 600	-	SWING TYPE	SS	HORIZONTAL with COVER UP or VERTICAL with UPWARD FLOW
WD	16	118	SG	50	Globe valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-051	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	Supplier to advice	DISC	316 SS	-
WD	16	119	SG	50	Globe valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-092	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A351-CF8M)	316 SS, API 600 TRIM #10	PTFE	Supplier to advice	DISC	316 SS	-
WD	16	120	SB	50	Ball valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-039	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	16	121	SB	50	Ball valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-040	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	16	122	SB	25	Ball valve	ENS-NWPVR-PID-24003	Drain point on line 50-16-WDVP-121	Demin Water	Liquid	38	1895	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-

WD	16	123	SB	50	Ball valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-043	Demin Water	Liquid	93	1585	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-	
WD	16	124	SB	50	Ball valve	ENS-NWPVR-PID-24003	Line 50-16-WDVP-048	Demin Water	Liquid	38	1895	Y	50	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-	
WP	16	125	CB	15	Ball valve	ENS-NWPVR-PID-24003	Line 15-16-WPCP-044	Process Water	Liquid	38	1965	Y	15	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	BALL	CS	-	
WP	16	127	CZ	15	Ball float valve	ENS-NWPVR-PID-24003	Cooling Tower T1604	Process Water	Liquid	38	1965	Y	15	THRD	ASME B1.20.1	CLASS 150	CS (ASTM A105/A216 WCB)	SUPPLIER TO ADVISE	FLEXIBLE GRAPHITE	SUPPLIER TO ADVISE	SUPPLIER TO ADVISE	SUPPLIER TO ADVISE	-	
WP	16	128	CG	15	Globe valve	ENS-NWPVR-PID-24003	Sampling Point S01	Process Water	Liquid	38	1965	Y	15	RF	ASME B16.5	CLASS 150	CS (ASTM A216 WCB)	13 CR DISC, HARDFACE SEAT, API 600 TRIM #8	CORROSION-INHIBITED, DIE-FORMED FLEXIBLE GRAPHITE with ANTI-EXTRUSION RINGS		DISC	CS	-	
WP	16	129	CB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WPCP-045	Process Water	Liquid	38	1965	Y	80	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	BALL	CS	-	
WP	16	130	CV	80	Strainer	ENS-NWPVR-PID-24003	Line 80-16-WPCP-045	Process Water	Liquid	38	1965	Y	80	RF	ASME B16.5	CLASS 150	SS (A351-CF8/A351-CF8M)	-	-	-	-	-	-	Y-Type Strainer, Screen - 304 or 316 stainless steel perforated or mesh screen
WP	16	131	CU	50	Non-return valve	ENS-NWPVR-PID-24003	Line 50-16-WPCP-046	Process Water	Liquid	38	1965	Y	50	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	13 CR, HARDFACE SEAT, API 602 TRIM #8	PER API 602	-	Poppet (Piston)	CS	Lift Check Valve (Installation: HORIZONTAL with COVER UP)	
WP	16	132	CG	50	Globe valve	ENS-NWPVR-PID-24003	Line 50-16-WPCP-046	Process Water	Liquid	38	1965	Y	50	RF	ASME B16.5	CLASS 150	CS (ASTM A216 WCB)	13 CR DISC, HARDFACE SEAT, API 600 TRIM #8	CORROSION-INHIBITED, DIE-FORMED FLEXIBLE GRAPHITE with ANTI-EXTRUSION RINGS		DISC	CS	-	

WP	16	133	CB	50	Ball valve	ENS-NWPVR-PID-24003	Line 50-16-WPCP-047	Process Water	Liquid	38	1965	Y	50	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	BALL	CS	-
WP	16	135	CB	25	Ball valve	ENS-NWPVR-PID-24003	Drain point on line 50-16-WPCP-047	Process Water	Liquid	38	1965	Y	25	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	BALL	CS	-
WD	16	136	SB	25	Ball Valve	ENS-NWPVR-PID-24003	Drain point on line 50-16-WDVP-043	Demin Water	Liquid	93	1795	Y	25	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	Flexible graphite	RTFE	BALL	316 SS	-
WD	16	137	SB	15	Ball valve	ENS-NWPVR-PID-24003	Vent from line 50-16-WDVP-121	Demin Water	Liquid	38	1895	Y	15	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	Flexible graphite	RTFE	BALL	316 SS	-
WD	16	200	SB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WDVP-050	Demin Water	Liquid	38	1895	Y	80	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WD	16	201	SB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WDVP-052	Demin Water	Liquid	38	1895	Y	80	RF	ASME B16.5	CLASS 150	SS (ASTM A182-F316/A351-CF8M)	316 SS	FLEXIBLE GRAPHITE	RTFE	BALL	316 SS	-
WP	16	203	CB	80	Ball valve	ENS-NWPVR-PID-24003	Line 80-16-WPCP-045	Process water	Liquid	38	1965	Y	80	RF	ASME B16.5	CLASS 150	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	BALL	CS	-
1					2	3	4	5 Notes 1, 2	6	7			11 Note 4	12				13					14
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions		Shared (Y/N)	Process Connection				Materials of Construction						Comment
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. (°C)	Press. (kPa(g))		Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seal	Seat	Plug / Ball / Disc	Bonnet / Cap	
AI	17	190	CB	15	Ball valve	ENS-NWPVR-PID-24014	Line 15-17-AICX-086	Instrument air	Gas	38	1965	N	15	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	-
AI	17	194	CB	15	Ball valve	ENS-NWPVR-PID-24014	Line 15-17-AICX-085	Instrument air	Gas	38	1965	N	15	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	BALL	CS (ASTM A105/A216 WCB)	-
AI	17	195	CB	15	Ball valve	ENS-NWPVR-PID-24014	Line 15-17-AICX-091	Instrument air	Gas	38	1965	N	15	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	BALL	CS (ASTM A105/A216 WCB)	-
AI	17	177	CB	25	Ball valve	ENS-NWPVR-PID-24014	Line 25-17-AICX-078	Instrument air	Gas	38	1965	N	25	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	-
AI	17	179	CB	40	Ball valve	ENS-NWPVR-PID-24014	Line 40-17-APCG-075	Air	Gas	38	1965	Y	15	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	Note 5
AI	17	180	CB	40	Ball valve	ENS-NWPVR-PID-24014	Line 40-17-APCG-076	Air	Gas	38	1965	Y	15	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	Note 5
AI	17	183	CG	40	Globe valve	ENS-NWPVR-PID-24014	Line 40-17-AICX-103	Instrument air	Gas	38	1965	Y	40	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	Note 5
AI	17	184	CB	25	Ball valve	ENS-NWPVR-PID-24014	Line 25-17-AICX-077	Instrument air	Gas	38	1965	Y	25	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	Note 5
AI	17	186	CB	25	Ball valve	ENS-NWPVR-PID-24014	Line 25-17-AICX-079	Instrument air	Gas	38	1965	N	25	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	-
AI	17	187	CB	25	Ball valve	ENS-NWPVR-PID-24014	Line 25-17-AICX-080	Instrument air	Gas	38	1965	N	25	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	316 SS BALL and STEM	FLEXIBLE GRAPHITE	RTFE	FLOATING BALL	CS (ASTM A105/A216 WCB)	-

AI	17	154	CB	15	Ball valve	ENS-NWPVR-PID-24014	Line 15-17-AICX-090	Instrument air	Gas	38	1965	N	15	RF	CS, ASTM A105, ASME B16.5	150#	CS (ASTM A105/A216 WCB)	CS (ASTM A105/A216 WCB)	FLEXIBLE GRAPHITE	RTFE	BALL	CS (ASTM A105/A216 WCB)	-
1					2	3	4	5 Notes 1,2	6	7		11 Note 4	12				13					14	
Valve Tag No.					Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Design Conditions		Shared (Y/N)	Process Connection				Materials of Construction					Comment	
Fluid Code	System No.	Valve No.	Valve Code	Valve Size						Temp. [°C]	Press. [kPa(g)]		Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seal	Seat	Plug / Ball / Disc		Bonnet / Cap
GO	18	158	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	1/4"-18-GOVF-065	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	159	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-066	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	160	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-067	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	161	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-069	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	162	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-070	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	163	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-070	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	164	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-071	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	167	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-121	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-
GO	18	168	SB	1/4"	Ball valve	ENS-NWPVR-PID-24015	Line 1/4"-18-GOVF-073	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	CLASS 600	SS (ASTM A182-F316L/A351-CF3M)	316 SS	Flexible graphite	RTFE	BALL	316 SS	-
GO	18	169	SN	1/4"	Needle valve	ENS-NWPVR-PID-24015	Line 1/4"-15-GOVF-062	Off-gas: Mixture of CO ₂ , HCl, N ₂ , O ₂ , and H ₂ O	Gas	93	8550	Y	1/4"	TCF	ASME B31.3	6000 psi	SS (ASTM A182-F316/A351-CF8M)	316 SS	PTFE	SUPPLIER TO ADVISE	316 SS	UNION BONNET	-

KO	831	128	SB	25	Ball valve	ENS-NWPVR- PID-24002 AC-FDP-PID- 22003	Line 25-831- KOV-072	Aqueous 30% (w/w) KOH solution	Liquid	38	1895	N	25	Weld Neck	SS, ASTM A182- F304/304L, ASME B16.5	150#, RF	SS (ASTM A182- F316/A351- CF8M)	SS (ASTM A182- F316/A351- CF8M)	FLEXIBLE GRAPHITE	RTFE	BALL	SS (ASTM A182- F316/A351- CF8M)	-
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Notes

- 1 The scrubbing solution composition will change over time due to the chemical reactions taking place in the scrubber. At the end of phase 1, the composition (w/w) will be 67.67% water, 1.05% KCl, and 30.78% K_2CO_3 . At the end of phase 2, the composition will t
- 2 The scrubber off-gas, changes over time due to chemical reactions taking place in the scrubber. The gas compositions (% w/w) are as follows: 1.3% CO_2 , 0.1% HCl, 51.9% O_2 and 46.7% N_2 at the start of the process, and 74% CO_2 , 0.02% HCl, 13.7% O_2 and 12.3'
- 3 Process ventilation pipeline and valve sizes to be determined during design of HVAC system.
- 4 Y = Valve is shared between the NW PlasGas and CWOPG Facilities, and utilized in both facilities. N = Valve is only utilized in the NW PlasGas Facility.
- 5 This valve is shared between the NW PlasGas and CWOPG Facilities, not as a result of integration of the two facilities, but rather as a result of one centralized instrument air supply system servicing all plasma gasification facilities in V-H2 Building. That system is incorporated into the NW PlaGas Facility.