necsa We're in your world — South African Nuclear Energy Corporation SOC Limited	**Low-Level Waste Plasma Gasification (NW PlasGas) Demonstration Project – Valve List**	**Doc. No.**	**ENS-NWPVR-LST-24002**
		Rev. No.	**5**

List of Manual Valves for Air Purification System

1					2	3	4	5 [Notes 1, 2]	6	7		8		9		10	11 [Note 4]	12				13						14	
Valve Tag No.										Design Conditions		Operating Conditions		SSC Safety Class				Process Connection				Materials of Construction							
Fluid Code	System No.	Valve No.	Valve Code	Valve Size	Valve Type	P&ID Number	Location (Line No. / Equipment No.)	Fluid	Fluid State	Temp. [°C]	Press. [kPa(g)]	Temp. [°C]	Press. [kPa(g)]	Nuclear (N)	Chemical (C)	Normal Position	Shared (Y/N)	Size	Type	Flange Spec.	Flange Rating	Body	Trim	Packing / Seal	Seat	Plug / Ball / Disc	Bonnet / Cap	Comment	QTY
AI	17	**154,194 And 195**	CB	**15**	Ball valve	ENS-NWPVR-PID-24014	**Line 15-17-AICX-090, Line 15-17-AICX-085 And Line 15-17-AICX-091**	Instrument air	Gas	38	1965	Amb	520	Non-classified	Non-classified	NO	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)	-	**3**
AI	17	**188,189 And 190**	CB	**15**	Ball valve	ENS-NWPVR-PID-24014	**Line 15-17-AICX-081, Line 15-17-AICX-082 And Line 15-17-AICX-086**	Instrument air	Gas	38	1965	Amb	520	Non-classified	Non-classified	NO	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)	-	**3**
AI	17	**177, 184, 186 And 187**	CB	**25**	Ball valve	ENS-NWPVR-PID-24014	**Line 25-17-AICX-078, Line 25-17-AICX-077, Line 25-17-AICX-079 And Line 25-17-AICX-080**	Instrument air	Gas	38	1965	Amb	520	Non-classified	Non-classified	NO	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)	-	**4**
AI	17	**179 And 180**	CB	**40**	Ball valve	ENS-NWPVR-PID-24014	**Line 40-17-APCG-075 And Line 40-17-APCG-076**	Air	Gas	38	1965	Amb	550	Non-classified	Non-classified	NO	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	**2**
AI	17	**183**	CG	**40**	Globe valve	ENS-NWPVR-PID-24014	**Line 40-17-AICX-103**	Instrument air	Gas	38	1965	Amb	520	Non-classified	Non-classified	NC	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	**1**
																												TOTAL	**13**

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 be 58.87%

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% N_2 at

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.