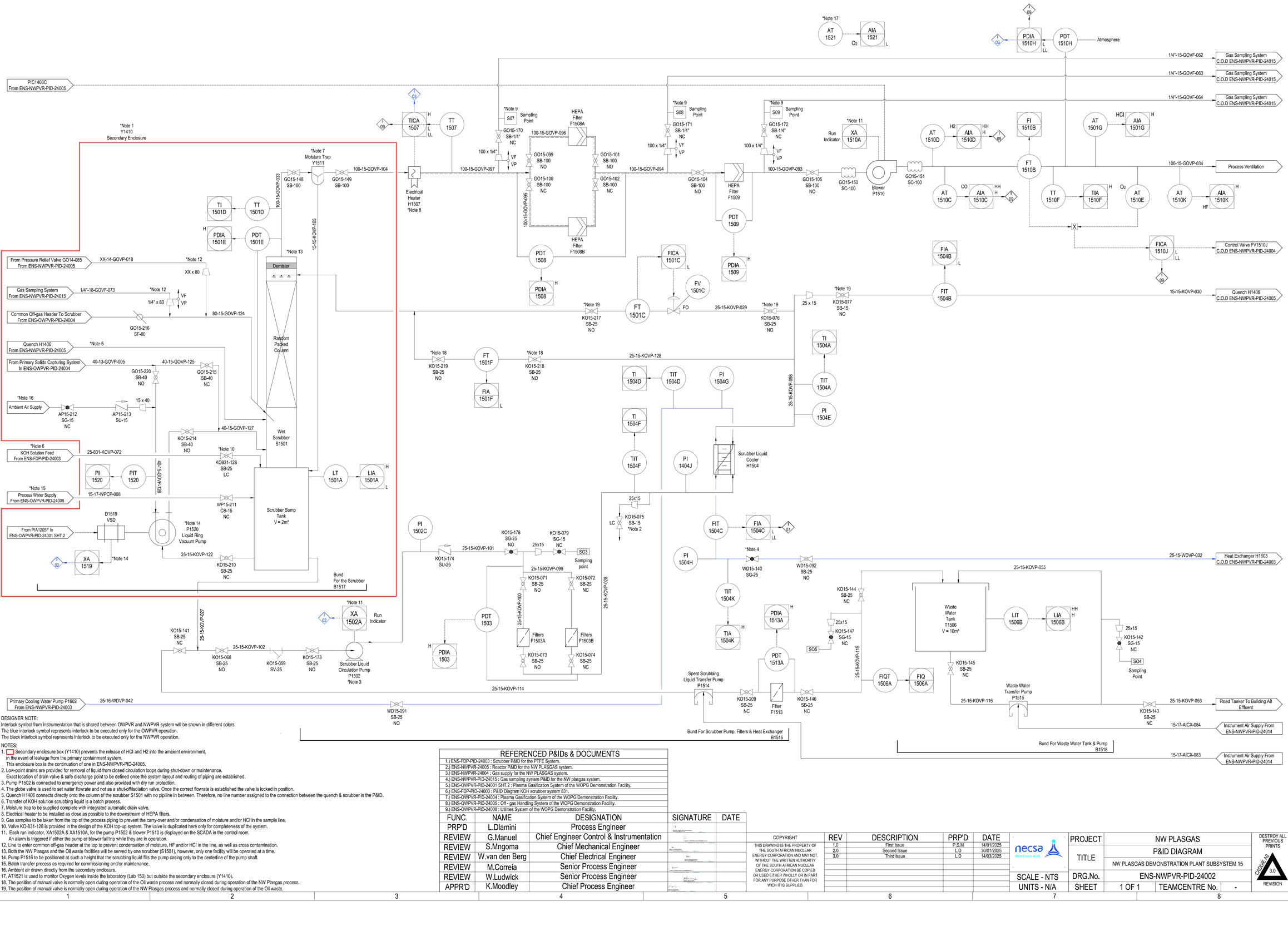

DESIGNER NOTE:
Interlock symbol from Instrumentation that is shared between OWPVR and NWPVR system will be shown in different colors.
The blue interlock symbol represents interlock to be executed only for the OWPVR operation.
The black interlock symbol represents interlock to be executed only for the NWPVR operation.

NOTES:
1. ☐ Secondary enclosure box (Y1410) prevents the release of HCl and H2 into the ambient environment, in the event of leakage from the primary containment system.
   This enclosure box is the continuation of one in ENS-NWPVR-PID-24005.
2. Low-point drains are provided for removal of liquid from closed circulation loops during shut-down or maintenance.
   Exact location of drain valve & safe discharge point to be defined once the system layout and routing of piping are established.
3. Pump P1502 is connected to emergency power and also provided with dry run protection.
4. The globe valve is used to set water flowrate and not as a shut-off/isolation valve. Once the correct flowrate is established the valve is locked in position.
5. Quench H1406 connects directly onto the column of the scrubber S1501 with no pipiline in between. Therefore, no line number assigned to the connection between the quench & scrubber in the P&ID.
6. Transfer of KOH solution scrubbing liquid is a batch process.
7. Moisture trap to be supplied complete with integrated automatic drain valve.
8. Electrical heater to be installed as close as possible to the downstream of HEPA filters.
9. Gas samples to be taken from the top of the process piping to prevent the carry-over and/or condensation of moisture and/or HCl in the sample line.
10. Valve KO-831-128 is provided in the design of the KOH top-up system. The valve is duplicated here only for completeness of the system.
11. Each run indicator, XA1502A & XA1510A, for the pump P1502 & blower P1510 is displayed on the SCADA in the control room.
    An alarm is triggered if either the pump or blower fail/trip while they are in operation.
12. Line to enter common off-gas header at the top to prevent condensation of moisture, HF and/or HCl in the line, as well as cross contamination.
13. Both the NW Plasgas and the Oil waste facilities will be served by one scrubber (S1501), however, only one facility will be operated at a time.
14. Pump P1516 to be positioned at such a height that the scrubbing liquid fills the pump casing only to the centerline of the pump shaft.
15. Batch transfer process as required for commissioning and/or maintenance.
16. Ambient air drawn directly from the secondary enclosure.
17. AT1521 is used to monitor Oxygen levels inside the laboratory (Lab 150) but outside the secondary enclosure (Y1410).
18. The position of manual valve is normally open during operation of the Oil waste process and normally closed during operation of the NW Plasgas process.
19. The position of manual valve is normally open during operation of the NW Plasgas process and normally closed during operation of the Oil waste.

REFERENCED P&IDs & DOCUMENTS
1.) ENS-FDP-PID-24003 : Scrubber P&ID for the PTFE System.
2.) ENS-NWPVR-24005 : Reactor P&ID for the NW PLASGAS system.
3.) ENS-NWPVR-24004 : Gas supply for the NW PLASGAS system.
4.) ENS-NWPVR-PID-24015 : Gas sampling system P&ID for the NW plasgas system.
5.) ENS-OWPVR-PID-24001 SHT.2 : Plasma Gasification System of the WOPG Demonstration Facility.
6.) ENS-FDP-PID-24003 : P&ID Diagram KOH scrubber system 831.
7.) ENS-OWPVR-PID-24004 : Plasma Gasification System of the WOPG Demonstration Facility.
8.) ENS-OWPVR-PID-24005 : Off - gas Handling System of the WOPG Demonstration Facility.
9.) ENS-OWPVR-PID-24008 : Utilities System of the WOPG Demonstration Facility.

FUNC.	NAME	DESIGNATION	SIGNATURE	DATE
PRP'D	L.Dlamini	Process Engineer		
REVIEW	G.Manuel	Chief Engineer Control & Instrumentation		
REVIEW	S.Mngoma	Chief Mechanical Engineer		
REVIEW	W.van den Berg	Chief Electrical Engineer		
REVIEW	M.Correia	Senior Process Engineer		
REVIEW	W.Ludwick	Senior Process Engineer		
APPR'D	K.Moodley	Chief Process Engineer		

COPYRIGHT
THIS DRAWING IS THE PROPERTY OF THE SOUTH AFRICAN NUCLEAR ENERGY CORPORATION AND MAY NOT, WITHOUT THE WRITTEN AUTHORITY OF THE SOUTH AFRICAN NUCLEAR ENERGY CORPORATION BE COPIED OR USED EITHER WHOLLY OR IN PART FOR ANY PURPOSE OTHER THAN FOR WICH IT IS SUPPLIED.

REV	DESCRIPTION	PRP'D	DATE
1.0	First Issue	P.S.M	14/01/2025
2.0	Second Issue	L.D	30/01/2025
3.0	Third Issue	L.D	14/03/2025

necsa
We're in your world

PROJECT	NW PLASGAS		
TITLE	P&ID DIAGRAM		
	NW PLASGAS DEMONSTRATION PLANT SUBSYSTEM 15		
SCALE - NTS	DRG.No.	ENS-NWPVR-PID-24002	
UNITS - N/A	SHEET	1 OF 1	TEAMCENTRE No. -

DESTROY ALL PREVIOUS PRINTS
CODE AD 3.0 REVISION

ENS-NWPVR-PID-24002