

EXECUTIVE SUMMARY

Lift cylinder pneumatic fittings on the main control panel circuit failed to hold high lift pressure after retape and retighten; fittings were replaced during this visit. A loose screwdriver was also found inside the live internal PLC panel — an immediate FOD and arc-flash hazard. Remainder of the CleanSwitch RTO (vessel, stack, ductwork, gas train, platforms, electrical cabinet wiring) is in serviceable condition. Verify the lift cylinder repair holds pressure under a full switch cycle before returning the unit to unattended operation.

PRIORITIZED ACTIONS

1	Remove screwdriver from internal PLC panel and audit enclosure for any other FOD TARGET: IMMEDIATE	CRITICAL
2	Verify replaced lift cylinder fittings hold high lift pressure through full switching cycles TARGET: IMMEDIATE	WARNING
3	Leak-check remaining pneumatic fittings on switching valve actuator circuit TARGET: WITHIN 30 DAYS	WARNING
4	Investigate staining at exhaust stack base flange and confirm joint integrity TARGET: NEXT QUARTERLY INSPECTION	INFO
5	Spot-treat surface oxidation on insulated process ductwork to arrest corrosion TARGET: NEXT PLANNED OUTAGE	INFO

6

Torque-check terminal blocks and inspect overhead harness for chafing in main control panel

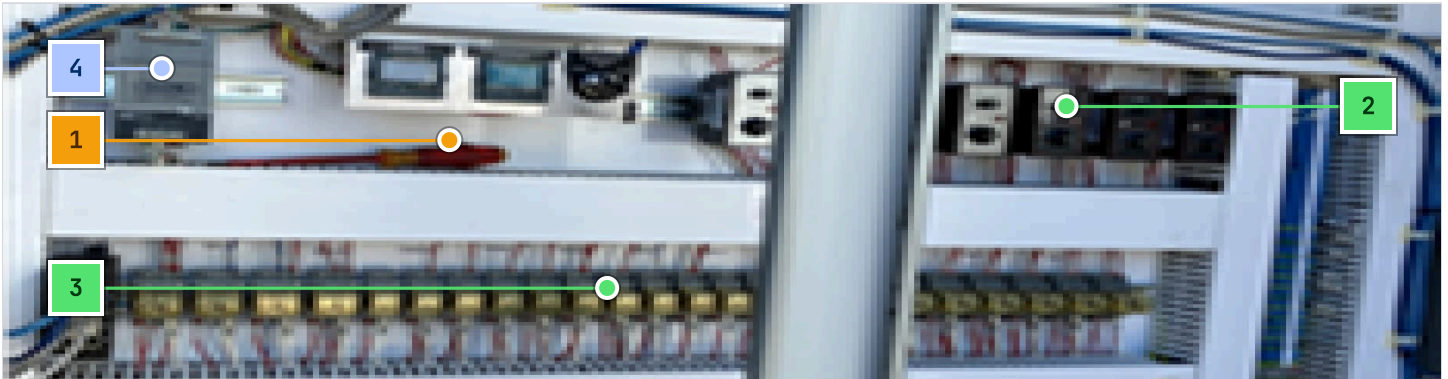
TARGET: NEXT QUARTERLY INSPECTION

● INFO

FINDINGS

01 Internal control panel (PLC)

● CRITICAL



— LEGEND

1

Loose Screwdriver

Tool left inside live panel, FOD hazard

2

Circuit Breakers

Breaker bank seated, switches aligned

3

Terminal Block Row

Wiring landed neatly, labels intact

4

PLC Module

Controller powered, status indicators visible

– DISCUSSION

A screwdriver is resting on the internal panel chassis between the PLC module and the breaker bank. Breakers, terminal rows, and controller indicators are otherwise in good order, but a loose ferrous tool inside an energized enclosure is an immediate FOD and short-circuit hazard.

– RECOMMENDATION

Remove the tool now and perform a tool/FOD sweep of the enclosure before closing. Reinforce tool-control discipline with site technicians.

02 Overall picture of unit

● GOOD



— LEGEND

1 Exhaust Stack

Stack exterior intact, no visible corrosion

2 Process Piping

External ductwork and piping appear sound

3 Gas Train

Fuel gas train accessible, no leaks observed

4 Control Cabinet

Control enclosure closed and properly sealed

— DISCUSSION

Overall view of the CleanSwitch RTO shows intact exhaust stack, sound external ductwork and process piping, and a sealed control cabinet. Gas train is accessible with no leaks observed on visual inspection.

— RECOMMENDATION

No action. Maintain current PM cadence.

03 Overall picture of unit

GOOD



— LEGEND

1 Exhaust Stack

RTO exhaust stack intact, no visible corrosion

2 Process Inlet Ducting

Blue VOC inlet duct, coatings intact

3 Natural Gas Supply

Yellow gas train piping to burner

4 Access Ladder/Platform

Maintenance platform and caged ladder serviceable

— DISCUSSION

Second elevation view confirms the RTO exhaust stack, blue VOC inlet duct coatings, and yellow gas supply piping are intact. Caged access ladder and maintenance platform remain serviceable.

— RECOMMENDATION

No action required.

04 Electrical Cabinet

GOOD



— LEGEND

1 **PLC I/O Modules**

Controller I/O terminals neatly wired, indicators visible

2 **Communication Gateway**

Fieldbus gateway module mounted on DIN rail

3 **Terminal Wiring**

Ferruled terminal blocks, organized vertical wireways

4 **Cable Entry Loop**

Service loops on cabinet side cable routing

— DISCUSSION

Electrical cabinet interior shows neatly ferruled terminal blocks, organized vertical wireways, and a fieldbus gateway mounted on DIN rail. PLC I/O indicators are visible and wiring service loops at the cable entry are properly dressed.

— RECOMMENDATION

No action. Include in next scheduled torque-check and thermographic survey.

05 Main control panel

● CRITICAL



— LEGEND

1 **Pneumatic Fittings**

Air fittings linked to leaking lift cylinder

2 **Terminal Block Row**

Control wiring terminals, check torque and labels

3 **Upper Wiring Harness**

Overhead harness routing, verify no chafing

4 **Cabinet Door Seal**

Door gasket intact, enclosure properly sealed

— DISCUSSION

Main control panel houses the pneumatic fittings feeding the valve lift cylinder; those fittings leaked and would not hold high lift pressure after retape and retighten, so they were replaced during this visit. Surrounding terminal blocks, overhead harness, and cabinet door seal are intact.

— RECOMMENDATION

Cycle the switching valve under full load and confirm lift pressure is stable. Leak-check the remainder of the cylinder pneumatic circuit and torque-check adjacent terminal blocks.

06 Overall picture of unit

GOOD



— LEGEND

1 Inlet Ductwork

Insulated process gas inlet duct intact

2 RTO Vessel Housing

Coated steel enclosure shows no deformation

3 Skid Piping Area

Gas train piping accessible below unit

4 Unit Identification

CleanSwitch nameplate clearly visible

— DISCUSSION

Side elevation shows insulated inlet ductwork, coated RTO vessel housing, and accessible skid piping with no deformation. CleanSwitch nameplate is legible.

— RECOMMENDATION

No action required.

07 Overall picture of unit

INFO



— LEGEND

- 1 RTO Housing**
CleanSwitch RTO main enclosure, intact exterior
- 2 Access Ladder**
Caged access ladder secured to unit
- 3 Portable Ladder**
Fiberglass step ladder staged for access
- 4 Platform Guardrail**
Yellow guardrail intact around service platform

— DISCUSSION

Unit is shown with caged access ladder secured and platform guardrail intact. A portable fiberglass step ladder is staged for service access; housing exterior is undamaged.

— RECOMMENDATION

Stow the portable ladder when not in use to keep the platform area clear.

08 Overall picture of unit

INFO



— LEGEND

1 RTO Main Chamber

CleanSwitch RTO housing, intact exterior cladding

2 Ductwork Surface Rust

Surface oxidation on insulated process ductwork

3 Discharge Stack Base

Staining visible at stack base flange

4 Gas Train Piping

Yellow natural gas supply line intact

— DISCUSSION

CS-350 main chamber cladding and yellow natural gas supply line are intact. Surface oxidation is visible on the insulated process ductwork and staining is present at the discharge stack base flange — neither is currently a structural concern but both warrant tracking.

— RECOMMENDATION

Spot-treat ductwork oxidation and inspect the stack base flange joint for weep or gasket distress at the next outage.