

Free Thermal Oxidizer & RTO Maintenance Checklist

Use this quick checklist to identify common issues before they become expensive problems.

1. General System Inspection

- ☐ Perform a visual inspection of the entire RTO/oxidizer
- ☐ Check for unusual noises, vibration, or odors
- ☐ Inspect ductwork and expansion joints for leaks or damage
- ☐ Check access doors and seals
- ☐ Look for signs of corrosion, buildup, or excessive material accumulation
- ☐ Verify all guards and safety equipment are in place

2. Burners & Combustion System

- ☐ Inspect burner assembly for damage or buildup
- ☐ Verify burner ignition is operating properly
- ☐ Check flame stability
- ☐ Verify combustion air is operating correctly
- ☐ Check fuel gas pressure
- ☐ Inspect fuel gas train components
- ☐ Check gas valves and actuators for proper operation
- ☐ Verify low-fire and high-fire operation

3. RTO Valves & Dampers

- ☐ Verify diverter valves operate smoothly
- ☐ Check valve actuators
- ☐ Inspect valve seals for wear
- ☐ Verify open/closed limit switches
- ☐ Check isolation and fresh-air dampers
- ☐ Look for excessive leakage through valves

4. Instrumentation & Controls

- ☐ Verify chamber temperature readings
- ☐ Check thermocouples for proper operation
- ☐ Verify pressure transmitters and gauges
- ☐ Check alarm functions
- ☐ Test safety interlocks
- ☐ Verify PLC is operating properly
- ☐ Check HMI for active or recurring alarms
- ☐ Verify remote monitoring and alarm notifications, if equipped

5. Gas Train Safety

- ☐ Inspect gas piping and fittings for leaks
- ☐ Check gas pressure regulators
- ☐ Inspect gas valves and solenoids
- ☐ Verify gas pressure switches
- ☐ Inspect flame arrestors, where applicable
- ☐ Test required safety shutoff devices
- ☐ Verify gas train inspection/testing is current

6. RTO Media & Chambers

- ☐ Check for excessive pressure drop
- ☐ Monitor chamber temperatures
- ☐ Look for signs of media plugging
- ☐ Check for material buildup
- ☐ Review operating efficiency
- ☐ Determine whether a **bake-out** may be required
- ☐ Determine whether a **wash-down** may be required

7. Fans & Motors

- ☐ Verify combustion fan operation
- ☐ Verify process fan operation
- ☐ Check motor condition
- ☐ Inspect belts, couplings, and bearings
- ☐ Check fan vibration
- ☐ Verify VFD operation and settings
- ☐ Inspect fan inlet filters

8. Safety & Compliance

- ☐ Verify emergency stops
- ☐ Test safety interlocks
- ☐ Verify LEL monitoring, where applicable
- ☐ Check high-temperature limits
- ☐ Verify alarm and shutdown functions
- ☐ Review required inspection and calibration intervals
- ☐ Keep inspection and maintenance records current

Red Flags — Don't Ignore These

If you notice any of the following, further inspection may be needed:

- ☐ Increasing fuel consumption
- ☐ Increasing pressure drop
- ☐ Frequent alarms
- ☐ Repeated burner failures
- ☐ Unstable temperatures
- ☐ Valve leakage
- ☐ Excessive vibration
- ☐ Unusual odors
- ☐ Decreased destruction efficiency
- ☐ Increasing VOC emissions
- ☐ Frequent PLC/HMI issues
- ☐ Recurring gas train problems

Need Help With Your Thermal Oxidizer?

Call Nitro Environmental (281) 682-8939 for
24/7 Support — Nationwide Service

<https://nitroenvironmental.com>