



Ventra Fowlerville, LLC

Malfunction Abatement Plan

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8887 W. Grand River Ave.
Fowlerville, Michigan

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1. Introduction



Ventra Fowlerville, LLC (Ventra) is a Tier I supplier of interior and exterior parts for automobiles. Ventra operates a facility in Fowlerville, Michigan for the production of front and rear automotive bumper assemblies (SRN N7413). The facility operates under Renewable Operating Permit (ROP) No. MI-ROP-N7413. Manufacturing activities at the facility include plastic injection molding and plastic bumper surface coating and assembly for shipment to the customer.

The primary source of emissions from the facility is the surface coating operation . The coating line is a conveyORIZED system consisting of a five (5) stage aqueous washline, three (3) down draft water wash spray booths (adhesive promoter (Ad-Pro), base coat, and clear coat), an Ad-Pro drying oven, and a final cure oven. Emissions from the Ad-Pro, base coat, and clear coat booths, and the final cure oven are controlled by a regenerative thermal oxidizer (RTO).

2. Equipment Description



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Solvent-laden emissions from the Ventra's surface coating operation are vented to a regenerative thermal oxidizer (RTO) to remove volatile organic compounds (VOEs) and hazardous air pollutants (HAPs) by controlled combustion.

voe- and HAP-laden process gas from the surface coating operation enters the oxidizer through an inlet manifold. Flow control valves direct the gas into energy recovery chambers containing ceramic media beds where the gas is progressively heated as it moves toward the combustion chamber. voes and HAPs are destroyed in the combustion chamber, which is heated by the combustion process itself as well as a natural gas burner to maintain the chamber's temperature at a minimum of 1400 degrees Fahrenheit. Once oxidized in the combustion chamber, the hot purified air releases thermal energy as it passes through the media bed in the outlet flow direction. The outlet bed is heated and the gas is cooled so that the outlet gas temperature is only slightly higher than the process inlet temperature. Valves alternate the airflow direction into the media beds to maximize energy recovery within the oxidizer and control residence time in the unit to ensure complete combustion. The high energy recovery within these oxidizers reduces the auxiliary fuel requirement and saves operating cost.

3. Preventative Maintenance Program



3.1 Responsible Personnel

The EHS Manager and Maintenance Department are responsible for the preventative maintenance program. The EHS Manager and Maintenance Department oversee inspections, maintenance and repair operations as they relate to the air emission control devices and are responsible for maintaining all associated documentation related to the preventative maintenance program. The EHS Manager reports to the General Manager and Maintenance Department reports to the Maintenance Manager.

3.2 Inspection & Maintenance

Routine inspection and maintenance tasks are included in the facility's Preventative Maintenance (PM) program. In general, maintenance assignments are provided to the appropriate personnel on a daily, weekly, or as needed basis for completion. Some of the daily operating parameter checks are performed by operations personnel as part of their standard operating procedures. Ventra's PM program includes two groups; facilities and equipment. The company's PM program is developed using regulatory standards and manufacturer's recommendations. The program identifies maintenance schedules, scopes, and document control. Example preventative maintenance checklists are provided in Appendix A.

The completed tasks are documented and filed in paper form and eventually will be stored electronically. An example of the documentation is included in Appendix B.

3.3 Replacement Parts

Ventra maintains a controlled inventory of replacement parts for equipment at the facility. The inventory is comprised of the parts identified as critical or routinely replaced, based on historical operation. The inventory includes parts for both process equipment and air emission control equipment. Also, as new equipment is installed on-site, the manufacturer's recommended spare parts are ordered and maintained in the inventory. Less frequent and overtly costly parts are maintained by the manufacturer or local suppliers and are available upon demand.

The spare/replacement parts inventory is managed by the Maintenance Department to ensure that the parts required in inventory are maintained on-site.

4. Operating Variables & Monitoring



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Potential malfunctions of air emissions control devices may be observed through parametric monitoring. The key element for monitoring the performance of the regenerative thermal oxidizer is combustion chamber temperature, which is continuously monitored using a temperature sensor. The normal operating range is a minimum of 1400 degrees Fahrenheit.

5. Startup, Shutdown & Malfunction Plan



The purpose of the Startup, Shutdown and Malfunction Plan (SSMP) is to identify potential malfunction scenarios and corrective actions for the facility's regenerative thermal oxidizer should a failure occur that can a VOC or HAP discharge limit exceedance.

5.1 Startup & Shutdown Procedures

Normal startup and shutdown procedures are outlined in **Standard Operating and Maintenance Procedures for Regenerative Thermal Oxidizer**.

5.2 Malfunctions

To prevent the accidental release of air contaminants, Ventra's regenerative thermal oxidizer is equipped with sensors to detect temperature excursions in the combustion chamber resulting from any of the following malfunctions:

- Duct work failure
- Manifold failure
- Valve failure
- Ceramic media failure
- Burner failure
- Burner gas supply failure
- Temperature sensor failure

5.3 Corrective Action Procedures

Ventra's regenerative thermal oxidizer is equipped with electronic interlock controls that monitor the combustion chamber temperature. Any temperature excursion that will result in an exceedance of air emission limits and/or damage to the unit will result in a shutdown of the unit and all coating line conveyors.

The general procedure for a control system malfunction is to troubleshoot, repair the malfunction and return to normal operations. If the troubleshooting reveals a more difficult repair or the cause cannot be determined, then the process will be shut down until the control system is operating properly. For the RTO, the equipment manufacturer will be contacted to work through the malfunction.

In the event of a malfunction, the following procedure will be implemented to resolve the problem and restore the unit to proper function:

1. Log the malfunction.
 - Date/Time/Observer
 - What was happening
 - Any indicators of what might have caused the excursion
2. Inform the EHS Manager and the Maintenance Department.

3. The EHS Manager and/or Maintenance Department Supervisor will assign qualified (trained) maintenance and electrical personnel troubleshoot, repair the malfunction and return the unit to normal operations. If the troubleshooting reveals a more difficult repair or the cause cannot be determined, the surface coating operation will remain shut down until the control system is operating properly.
4. Upon restoring the regenerative thermal oxidizer to full operation, the repair technician will confirm that acceptable operating conditions have been achieved.
5. Log the repair.
 - What corrective actions were taken
 - When was the unit restored to proper operation
 - Provide a copy of the malfunction report within 24 hours of the incident

Appendix A
XXXXXX



Appendix B
XXXXXX





Simple Work Order Details

259034: RTO MONTHLY PM

Asset: FV -RTO-01 RTO BURNER
Location: FV-PAINTING Paint System Related Equipment
Row / Col:
Work Type: PM
Equipment: RTO

Status:	INPRG
Priority:	2
Report Date:	3/18/19
Reported By:	Cindy Palmer
Classification:	
PM Number:	1706
Job Plan:	FV-RTO-M

Lead:	VPF23593
Crew:	
Target Start:	3/18/19
Dept/Trade:	FVMAINT

Task ID	Description	Status
/ 10	System must be shut down to perform this PM.	INPRG
/ 20	Use appropriate lock-out tag-out procedures for this equipment.	INPRG
/ 25	For all greasing applications use Lithium Synthetic Hi Temp. grease ONLY.	INPRG
/ 30	Check the UV sensor to be in good condition. Clean the glass face with a CLEAN	INPRG
/ 31	DRY rag. Remove any debris from the UV sensor tube and replace sensor.	INPRG
/ 40	Inspect the ignitor cable for wear and the ignitor cap and plug for corrosion.	INPRG
/ 50	Inspect the gas switching valve seals to be in good condition.	INPRG
/ 60	Apply grease to the shaft of the combustion air regulating valve until grease just	INPRG
/ 61	appears at the end of the shaft. Wipe off excess.	INPRG
/ 70	Clean the follower of the combustion air regulating valve and apply a VERY LIGHT	INPRG
/ 71	coat of new grease.	INPRG
/ 80	Using light air tool oil lubricate the 2 pivot points on the linkage arm of the combustion	INPRG
/ 81	air regulating valve.	INPRG
/ 90	Check that the linkage arm of the combustion air regulating valve is tight.	INPRG
/ 100	Apply 2 pumps of grease to the shaft of the gas regulating valve. Zerk is in back and	INPRG
/ 101	hard to see.	INPRG
/ 110	Clean the follower of the gas regulating valve and apply a VERY LIGHT coat of new grease	INPRG
/ 111	Check thermocoupler for proper operation	INPRG
/ 120	Using light air tool oil lubricate the 2 pivot points on the linkage arm of the gas regulating valve	INPRG
/ 121	Check that the linkage of the gas regulating valve is tight.	INPRG
/ 130	Check insulation of chamber	INPRG
/ 140	Apply 2 pumps of grease to both the front and rear bearings of the combustion air	INPRG
/ 141	blower motor.	INPRG
/ 150	Apply grease to the upper bearing of the 4 way damper just below the Jamesbury	INPRG
/ 151	rotarty actuator.	INPRG
/ 160	Apply grease to the 2 bearings of the system fan blower shaft until a bead of grease	INPRG



Simple Work Order Details

259034: RTO MONTHLY PM

Task ID	Description	Status
✓ 170	just appears at the side of the seal. DO NOT OVERGREASE.	INPRG
✓ 180	Remove lock-out.	INPRG
✓ 190	Inform supervisor of anything that may have looked suspicious during PM.	INPRG

Completed By: Victor S Fuentes

Date: 03/19/19

Supervisor: 

Date: 3-20-19



Simple Work Order Details

266333: RTO BURNER QUARTERLY PM

Asset: FV -RTO-01 RTO BURNER
Location: FV-PAINTING Paint System Related Equipment
Row / Col:
Work Type: PM
Equipment: RTO

Status:	INPRG
Priority:	2
Report Date:	4/22/19
Reported By:	Cindy Palmer
Classification:	
PM Number:	1707
Job Plan:	FV-RTO-Q

Lead:	VPF23593
Crew:	
Target Start:	4/23/19
Dept/Trade:	FVMAINT

Task IDs

Task ID	Description	Status
10	Equipment must be down to perform this PM.	INPRG
20	Utilize proper lock-out/tag-out procedures.	INPRG
30	Remove the system fan access door and inspect interior for signs of wear or build-up	INPRG
31	on blower. If necessary clean debris from blower using a wire brush capturing all	INPRG
32	debris.	INPRG
40	Inspect the bottom of the blower housing for moisture build-up. Drain if needed.	INPRG
50	Check the blower set screws to be tight.	INPRG
60	Inspect the seal for the system fan access door. Replace if necessary.	INPRG
70	Check the coupling of the system fan motor to the blower to be in good condition and	INPRG
71	bolts of the coupling to be tight.	INPRG
80	Check the split collar that holds the combustion air blower to it's motor to be tight.	INPRG
90	Check all bolts and gas line fittings of the combustion air blower and burner to be tight.	INPRG
100	Check the bolts of the split collar of the Jamesbury rotary actuator to the 4 way	INPRG
101	switching damper to be tight.	INPRG
110	Check and clean the ignitor (spark plug). Verify condition and a gap of .035".	INPRG
120	Inspect the disconnect of the main control panel for signs of arcing.	INPRG
130	Remove lock-out.	INPRG

Completed By: Victoria J F Joias
Date: 04/30/19

Supervisor: [Signature]
Date: 4/30/19

Simple Work Order Details

216685: RTO YEARLY PM

Asset: FV -RTO-01 RTO BURNER
Location: FV-PAINTING Paint System Related Equipment
Row / Col:
Work Type: PM
Equipment: RTO

Status:	INPRG
Priority:	2
Report Date:	8/6/18
Reported By:	Cindy Palmer
Classification:	
PM Number:	1708
Job Plan:	FV-RTO-Y

Lead:	VPF25131
Crew:	
Target Start:	8/6/18
Dept/Trade:	FVMAINT

Task ID	Description	Status
/ 10	During a prolonged shutdown lock-out/tag-out the unit to prevent accidental start-up.	INPRG
/ 20	Wear all proper personal protection equipment.	INPRG
/ 30	Inspect the ceramic refractory material throughout the oxidizer to be in good condition.	INPRG
/ 40	Do not walk directly on ceramic material. Use plywood to cover the bottom of the chamber.	INPRG
/ 50	Look for any gaps in the ceramic material. If gaps are present repack using a putty	INPRG
/ 51	knife or screwdriver.	INPRG
/ 60	Isolate the incoming natural gas Y strainer. Clean strainer place on cap and reinstall.	INPRG
/ 70	Replace all thermocouplers	INPRG
/ 80	Inspect valve seals condition and verify valve timing/synchronization	INPRG
/ 90	Remove lockout and test system.	INPRG

Completed By: Jeff Adams
Date: 7-28-18

Supervisor: [Signature]
Date: 8-8-18