STARTUP, SHUTDOWN, AND MALFUNCTION PLAN

SCHNELLER, LLC – PINELLAS PARK, FLORIDA

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1.0 PLAN REVISIONS/REVIEWS:

The following table describes revisions and annual reviews made to this plan. Copies of previous issues of this plan are maintained on the Operations "H" Drive within the Engineering folder. Hard copies of the current plan are located in a notebook in the Engineering Dept.

Table 1. List of Revisions to SSMP

SCHNELLER, LLC Location FLA

Revision Number	Date	Revisions/Review	Comments
0	December 5, 2005	Original Issue	Original Issue
1	May 15, 2006	• Rev of operating temp.	Lower thermal oxidizer temperature 1250°F
2	July 10, 2008	• Rev of operating temp.	Change thermal oxidizer target to 1400 min 1350° per stack test 5/15/08
3	October 26, 2011	• Rev of facility name (Inc. to LLC), Incinerator operating temp, PTE, audible alarms, incinerator as RTO, USEPA reporting, shutdown of coating process, O&M plan information	• Inc. to LLC • Incinerator: 1250F to 1350F • PTE .008" to .007" • Audible alarms included • USEPA reporting: region 5 to region 4, also to notify Pinellas County Air Quality Division • O&M plan information removed All changes per Title V renewal application EPA visit August 15, 2011
4	December 14, 2011	• Addition of igniter plug and flame rod, calibration date field, emission unit number and facility name to PM logs in O&M plan	Added per county's request
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2.0 INTRODUCTION

This Startup, Shutdown and Malfunction Plan (SSMP or the Plan) has been prepared in accordance with the requirements of the federal National Emission Standards for Hazardous Air Pollutants (HAPs) found in Subparts A (General Provisions), and JJJJ (National Emission Standards for the Coating Industry) in 40 CFR 63. Subparts JJJJ apply to one coating line at SCHNELLER, LLC, located in Pinellas Park, Florida.

In broad summary, under Subpart JJJJ, SCHNELLER, LLC, is required to achieve a 95 per cent overall control efficiency by containing HAP emissions from its coating operations in a room that meets the definition of a *permanent total enclosure* (PTE), and venting these emissions to a **Recuperative** Thermal Oxidizer (RTO) that achieves a minimum destruction efficiency of 95 per cent, calculated on a monthly basis. The plant is required to assure that the RTO combustion chamber temperature is monitored and recorded continuously to demonstrate that it is kept at or above a target temperature that indicates its ability to destroy HAPs. The plant is required to assure that HAP emissions are ducted to the RTO at all times.

2.1 General Purpose of a SSMP

This section has been adapted from the Preamble to 40 CFR 63 Subpart A.

In developing strict compliance standards for controlling HAPs, the US EPA acknowledged that a plant cannot assure faultless operation of its air pollution control system 100 per cent of the time. Equipment may occasionally *malfunction*. Certain processes have higher emissions during *startup* or *shutdown* events. During these events, a company is obligated to do its reasonable best to maintain compliance with the standards. The SSMP is viewed as a **reasonable bridge** between the difficulties associated with determining compliance with an emission standard during these events, and a blanket exemption from emission limits.

US EPA envisioned that a Plan should be:

- **Thorough**, but
- Based on **reasonable evaluations** by the owner or operator, and
- Provide **flexibility** to act appropriately at all times to **reduce emissions** during these events

The Plan is kept on file at the plant. The Plan must meet specific requirements, but the level of detail is left to the discretion of the plant. US EPA's expectation is that the level of detail will be that needed by plant personnel to ensure proper operation and maintenance of equipment during startup, shutdown and malfunction events.

More specifically, if excess emissions are expected to occur for a particular type of event, the plan needs to be **correspondingly detailed** to ensure that appropriate actions are taken to control the emissions.

The Plan should be limited to equipment that can have an effect on compliance with the relevant standard. Therefore, the Plan should only address events that would be reasonably anticipated to cause emissions in excess of an otherwise applicable standard, or cause the plant to operate outside of an established parametric requirement.

EPA acknowledged that it is impossible for owners and operators to develop plans that address every conceivable malfunction, and, therefore, expects a company's actions to be "materially" consistent with the Plan.

The Plan is kept only at SCHNELLER, LLC, and is reviewed by SCHNELLER, LLC, personnel to assure it meets these objectives, and the specific requirements described in the following sections. US EPA can request a copy of the Plan. US EPA can require revisions to the Plan, if, based on information such as monitoring results, review of the Plan, review of Operation & Maintenance records, or inspection of the plant, the Plan is found to be deficient because it:

- failed to address a SSM that has occurred;
- fails to meet the three specific objectives of the Plan, as described in Section 2.3; or
- does not provide corrective measures

In summary, this Startup, Shutdown and Malfunction Plan (SSMP) describes, in detail, the procedures for operating and maintaining the coating operation and its air pollution control systems during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment.

SCHNELLER, LLC, references certain Training Document procedures established by the plant as part of this plan.

2.2 Process Overview

SCHNELLER, LLC, operates one coating source, which utilizes a permanent total enclosure (PTE) in the facility. The coater is used for direct coating of various liquid materials onto a release paper and then cured in a drying oven. The coating source and (PTE) are directly connected to the onsite RTO control device. The exhaust is routed to the (RTO). The (PTE) enclosure exhaust is ducted into the source curing oven whose exhaust is directed to the (RTO) for control of volatile organic compounds (VOC) which include certain Hazardous Air Pollutants (HAPs). The system does not contain have a bypass vent.

The PTE is fully enclosed, with at least one natural draft openings (NDO). Access to the enclosures is via man-doors with self-closure mechanisms, and sliding doors, which are

opened and closed manually to bring raw material to the production line for processing. SCHNELLER, LLC, has demonstrated that each enclosure meets the definition of a PTE in accordance with US EPA criteria. Witnessed confirmation has been approved by Local EPA by demonstrating compliance with Method 204 a-d. The minimum required air flow of 200 ft./minute into each (NDO) of the (PTE) was confirmed. Compliance is continuously measured by monitoring the differential pressure of each (PTE) to ensure a minimum of 0.007 "/WC, which is equivalent to the required 200 ft./minute flow. This differential pressure is measured by a pressure transducer device referred to as P1. Since the enclosure meets these criteria, US EPA specifies that the capture efficiency of VOCs and HAPs is 100 percent.

The RTO was designed to achieve a minimum of 95 percent destruction and removal efficiency of VOCs and HAPs. Testing by the facility indicates that the actual Destruction Rate Efficiency (DRE) exceeds this minimum requirement, when a combustion chamber temperature of at least 1350^0 F is maintained. This temperature is referred to in this Plan as the "target temperature." This temperature is measured by a thermocouple referred to in the RTO design information as T1.

For example, the Overall Control Efficiency (OCE) of 96% during the most recent Witnessed Performance Test is 100.0% capture x 96 % Destruction Rate Efficiency (DRE) = 96% Overall Control Efficiency (OCE).

SCHNELLER, LLC, has chosen the compliance option in the Subpart JJJJ standard whereby compliance is demonstrated by achieving an (OCE) of at least 95 per cent. Compliance is demonstrated by enclosing the production lines in a (PTE) with certified natural draft openings monitored by P1, and operating the RTO with T1 at or above the target value. Continuous records of P1 and T1 are collected by a data acquisition system (DAS) and automatically printed out on a daily basis. In order to comply with the MACT standards, P1 and T1 data is collected every minute during source operation and averaged on a 3-hour basis.

The data acquisition system has a battery backup system to collect data in case of PC failure for reliability purposes, to minimize the possibility of lost or missing P1 and T1 information. Furthermore, a chart recorder backup is maintained for T1 redundancy.

2.3 Purpose of the SSMP

The purpose of the SSMP is to:

A. Ensure that, at all times, Schneller, LLC, operates its coating operation, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions of HAPs;
B. Ensure that SCHNELLER, LLC, is prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of HAPs; and

C. Reduce the reporting burden associated with periods of startup, shutdown and malfunctions (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

[40 CFR 63.6(e)(3)(i)(A)-(C)]

2.4 Scope of the Plan

This document provides the detailed plan for:

- Understanding what is considered a startup, a shutdown, and a malfunction;
- Taking corrective action as soon as practicable during known, possible malfunction events to minimize emissions of HAPs;
- Maintaining the air pollution control equipment, and the instrumentation associated with monitoring P1 and T1 in a manner consistent with good air pollution control practices;
- Keeping requisite records; and
- Submitting requisite reports.

Equipment addressed in the plan consists of:

- One RTO.
- One PTE.
- Monitoring and recording equipment for P1 and T1.

2.5 Requirement to Follow the Plan

To comply with the federal standards, SCHNELLER, LLC, is **required** to operate and maintain its air pollution capture and control system **in accordance with this plan** during periods of startup, shutdown and malfunction.

[40 CFR 63.6(e)(3)(ii)]

2.6 Every Startup, Shutdown or Malfunction requires the Operator to follow defined procedures.

Specific instructions for the Startup, Shutdown or action required during a Malfunction are described in specific Training Documents in Appendices C - G.

3.0 DEFINITIONS

The following terms are used throughout this document, as defined in the MACT standards in 40 CFR 63.[1] Clarifications to these definitions, as relevant to SCHNELLER, LLC, are shown in *italics*.

Affected source is the coating line at the facility.

Startup means the setting in operation of an affected source for any purpose.
This broad definition comes from Subpart A - the General Provisions for all MACT standards. In the specific case of Subpart JJJJ, "the provisions of Subpart A, pertaining to SSMs do not apply unless a control device is used to comply with the Subpart."
[40 CFR 63.830(b)(5)]

This disclaimer clarifies US EPA's intent, that it is not relevant to compliance to consider each time an individual press starts as a startup.
For SCHNELLER, LLC, startup refers to startup of the RTO and, thereby, its associated capture system and temperature monitoring system.

Shutdown means the cessation of an affected source for any purpose.
Similarly to above, shutdown refers to shutdown of the RTO.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.
Equipment relevant to compliance with the standard at SCHNELLER, LLC, that could malfunction consists of:

- *the RTO including its process fan – its failure would result in the affected facility not meeting the 95 percent control efficiency;*
- *the (PTE) - failure to close doors could compromise the permanent total enclosure, thereby resulting in the capture efficiency dropping below 100 per cent;*

In addition to the above equipment, the data acquisition system is relevant to compliance with the standard. Its failure could result in lack of required information regarding P1 and T1; this type of failure does not fit the equipment description in the definition of a malfunction. Rather, its malfunction is classified as a "CMS malfunction."

Continuous Monitoring System (CMS) is a comprehensive term that may include, but is not limited to, continuous emission monitoring systems (CEMS), continuous opacity

[1] These definitions are found in 40 CFR 63.2 in Subpart A - The General Provisions, and from 40 CFR 63.822 in Subpart KK –Standards for the Printing and Publishing Industry.

monitoring systems (COMS), continuous parameter monitoring systems, or other automatic or manual monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis…
The pressure transducer and thermocouple recording device for P1 and T1 is a CMS.

Continuous Monitoring System (CMS) Malfunction means any sudden, infrequent, and not reasonably preventable failure of a CMS.
The CMS for T1 is the only CMS. Its malfunction is a CMS malfunction.

Control Device means a device such as … an oxidizer which reduces the organic HAP in an exhaust gas by… destruction.
The RTO is a control device.

4.0 EQUIPMENT MALFUNCTIONS AND CORRECTIVE ACTION

Equipment relevant to compliance with the standard at SCHNELLER, LLC, that could malfunction consists of:

- the RTO including its process fan – its failure would result in the affected facility not meeting the 95 percent control efficiency;
- the (PTE) - failure to close the doors could compromise the permanent total enclosure, thereby resulting in the capture efficiency dropping below 100 per cent.

Failure of the temperature monitoring system is a "CMS malfunction," and is addressed in the subsequent section.

Each malfunction must be recorded on the SSM log. The form is designed to include relevant information that includes:

- date, and time
- time and duration of malfunction
- materials produced
- cause
- corrective action

4.1 RTO

The control device is natural gas-fired Recuperative Thermal Oxidizers (RTO) manufactured by Gehnrich & Gehnrich. The RTO has a process fan with flows up to 14,000 ACFM.

The Operation of the RTO is monitored by the data acquisition system and has safety devices and alarms integrated into the systems control panel. In case of a failure or operating outside of established operating parameter ranges, the Operator is notified by an audible and/or visual alarm. The action required for each alarm is outlined within the appropriate Training Document.

Various alarms may trigger depending upon the problem. Some warning alarms indicate to the Operator that an undesirable condition is nearing, prompting corrective action. Other such alarms indicate a possible malfunction of the RTO and subsequent shutdown of the control device, prompting other courses of action.

The malfunction code, description, and recommended corrective action are compiled in Appendix A. These "cause codes" are also entered on the SSM Log in the event of a malfunction.

4.2 PTE Doors

A failure of a door to close for an extended period of time in the permanent total enclosure could compromise the capture efficiency of that enclosure. A failure as described will be reflected by an alarm and illumination of a yellow strobe light from the data acquisition system, prompting the Operator to take necessary corrective action. Further delays, may result in a warning condition signaled by a red light that requires the Operator to follow procedures leading to a shutdown of the source.

4.3 Safety Alarms

4.3a: RTO alarms:

The thermal oxidizer has a loud klaxon alarm triggered by any of the following conditions:

- High temperature level of the thermal oxidizer probe
- Low thermal oxidizer air flow prior to the burner and after the input duct blower
- Loss of signal from optical light sensor on the pilot burner
- Low or high natural gas pressure alert
- Low air pressure alert

All these triggers shutdown the RTO and process line burners. The systems will not restart until all sensors are within range.

5.0 STARTUPS AND SHUTDOWNS

5.1 Startup

The Training Document provides Standard Operating Procedures for startup of the RTO unit. The RTO is operated on a daily work day basis. Startups would normally be expected to occur once daily.

5.2 Shutdown

The Training Document provides Standard Operating Procedures for shutdown of the RTO unit. The RTO is operated on a daily work day basis. Shutdowns would normally be expected to occur at the end of the word day shift.

6.0 MAINTAINING THE RTO - GOOD AIR POLLUTION CONTROL PRACTICES

A fundamental objective to the Plan is to ensure that, at all times, SCHNELLER, LLC, operates its air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions of HAPs.

One aspect to meeting this objective is maintaining the RTO system in good working order.

6.1 Preventive Maintenance – Period Inspection/Lubrication

SCHNELLER, LLC, has developed a Preventive Maintenance (PM) schedule after consultation with RTO manufacturers. For quick reference, a copy of the (PM) schedule is presented as Appendix J to this Plan. These activities are performed on a monthly, quarterly, bi-annual or annual basis, depending upon the task and associated risk. The intent is to maintain the units in good working order and minimize downtime due to failure.

6.2 Preventive Maintenance – Annual Inspection/Replacement Service

SCHNELLER, LLC, periodically performs planned routine internal maintenance inspections of the RTO while sources are taken out of service. These inspections may result in the repair or replacement of components involving the services of external contractors. This planned maintenance is typically done on an annual basis. Records of maintenance performed on the RTO unit are maintained for a period of at least five years.

6.3 Unscheduled Repairs and Maintenance

Emergency or other non-routine maintenance or repair functions may be performed by SCHNELLER, LLC, staff, by local contractors, or by the manufacturer's repair technicians. Records of maintenance performed on the RTO unit are maintained for a period of at least five years.

7.0 CONTINUOUS MONITORING SYSTEMS (CMS)

SCHNELLER, LLC's differential pressure transducers, thermocouples and recording devices comprise the continuous monitoring system (CMS) for the RTO.

7.1 CMS Malfunctions

Immediate repair or replacement of CMS parts to correct routine or otherwise predictable CMS malfunctions is required.

7.2 Calibration

The instrumentation displaying the data from P1 or T1 must be calibrated on a quarterly basis. This is completed by following designed calibration procedures.

7.3 Spare Parts

SCHNELLER, LLC, maintains a spare parts inventory to minimize CMS downtime in the event of a failure.

7.4 Redundancy for CMS Recorder

SCHNELLER, LLC, has installed a battery backup system within the data acquisition system to continue to collection of data in case of a PC or particular component failure. This will minimize the possibility of lost or missing P1 and T1 information. Furthermore, a chart recorder backup is maintained for T1 redundancy.

7.5 CMS Alarms

The data acquisition system is setup with alarms to notify the Operator in advance when operating parameter approach permit limits. The alarms are identified as:

- Green Light – all P1 and T1 values exceed minimum requirements.
- Yellow Light – Alarm – Indicates P1 and/or T1 values drifting lower towards the minimum requires indicating corrective action is necessary.
- Red Light/Audible – Warning – Indicates P1 and/or T1 values continue to drift and source shutdown actions are required.

8.0 RECORDKEEPING AND REPORTING REQUIREMENTS

8.1 Verifying Malfunction Event

US EPA requires that SCHNELLER, LLC, demonstrate that the provisions of the SSMP were followed during periods of startup, shutdown, and malfunction. Records of the occurrence, the duration, the affected source, control device, or monitoring equipment, and corrective actions taken must be kept.

No source operation startup is permitted unless all alarms conditions are silent. Shutdown is required when a failure or malfunction occurs to the RTO. This is indicated by a specific warning alarm condition. When a shutdown condition occurs, the process is shutdown is such a way as to minimize the emissions. This is accomplished by interrupting the production run by stopping the coating or printing of materials, allowing them to continue through the curing oven minimizing cleanup. This requires an entry in the Logs including all necessary information, for each Malfunction event. This process is detailed in the necessary Training Documents in Appendix B.

8.2 Immediate Report to US EPA Region 4 for Plan Deviation

SCHNELLER, LLC, is expected to follow this Plan for each malfunction event. In the event that SCHNELLER, LLC, does not follow this Plan, US EPA requires notification that includes a record of actions taken to correct a malfunction that were inconsistent with those outlined in the SSMP.

In such cases, the actions shall be recorded and US EPA Region 4 notified within 2 days of commencing the actions. The immediate notification to the EPA is made via telephone call or fax. Also notify Pinellas County Air Quality Division.

This notification must be followed by a letter within 7 working days after the end of the event. The letter should be signed by the Responsible Official (RO) and contain the reasons for deviating from the SSMP and whether or not excess emissions were believed to have occurred.
[40 CFR 63.6(e)(3)(iv)]

8.3 Revisions to the SSM Plan

In the event that this Plan fails to address a situation surrounding a SSM, the plan must be modified within 45 days of the event that warranted deviation from the SSMP.

Previous versions of the plan must be maintained on-site and made available to the US EPA for a period of 5 years after the revision. SSMP revisions are kept in the Engineering Dept.

8.4 Semi-Annual Report to US EPA Region 4

Semi-annual reports must be submitted semiannually to US EPA Region 4 and be postmarked by the 30th day following the end of the reporting period (half calendar year).

The report should consist of a letter containing name, title, and signature of the RO certifying that the actions taken were consistent with the SSMP.

In the event that actions were taken which required deviation from the SSM, copies of the notices described under Plan Deviation Reporting should be included in the semi-annual report.
[40 CFR 63.10(d)(5)(i)]

NO PROCESSES OR PRODUCTION ORDERS ARE TO BE RUN UNLESS:

1) **The respective thermal oxidizer is on and up to the necessary operating temperature as indicated by the warning lights:**
   a. **Thermal oxidizer – "Target Temperature" = 1350 deg. F.**
2) **The work centers enclosure is operating above necessary operating pressure as indicated by the warning lights:**
   a. **Greater than or equal to 0.007 " wc.**

MALFUNCTION CODES		
Alarm Code	**Condition/Description**	**Corrective Action**
RTO Malfunctions		
A	Process Shutdown Procedure	**1) Stop processing by disengaging coating paint pump.** **2) Continue processing material through curing oven.** **3) Clean head accordingly.** **4) Enter Malfunction in appropriate log.** **- Provide information in all fields of log.** **5) Contact Supervisor and Maintenance Department.**
10	High Temperature Alarm:	• Reset High Temperature Controller. • Attempt to re-light thermal oxidizer and recover. • Adjust lines speeds accordingly. • If unit fails to re-light after three attempts, or fails to return to operating temperature, shutdown the process by following the **Process Shutdown Procedure** as described above.
11	Blower Failure:	• Attempt to reset or correct the appropriate alarms conditions. • Attempt to re-light thermal oxidizer and recover. • If unit fails to re-light after three attempts, or fails to return to operating temperature, shutdown the process by following the **Process Shutdown Procedure** as described above.
12	Limit Normal Failure:	Same as above

MALFUNCTION CODES		
Alarm Code	**Condition/Description**	**Corrective Action**
13	Burner Failure:	Same as above
14	Flame Out Failure:	Same as above
15	Oxidizer Ready Indicator:	Same as above
Monitoring Alarm Conditions		

20	Green Light Illuminated	• <u>All conditions within limits, continue processing.</u>
		  • Thermal oxidizer temp. greater than or equal to **"Target Temperature"**.
		  • Enclosure pressure greater than or equal to 0.007" wc.

21	Yellow Light Illuminated	• Indicates:
		  1) <u>PTE pressure low, less than 0.007" wc.</u>
		  • Attempt to diagnose problem and make simple repairs.
		  1) Check/ensure all doors are closed.
		  • Correct as soon as possible.
		  • Check pressure differential reading for enclosure. If gauge continues to read a value of 0.007 inches or greater, continue processing and verify periodically. If enclosure pressure remains above this value, the door failure does not require recording as a malfunction.
		  • If efforts to increase pressure differential above 0.007 "wc are not successful, contact your Supervisor and Maintenance Dept.
		  2) <u>Thermal oxidizer temperature is low, less than **"Target Temperature"**.</u>
		  • Attempt to diagnose problem and make simple repairs.
		  1) Check/ensure unit is on and operating properly via panel.
		  • Correct as soon as possible.
		  • If temperature value increases and stabilizers at or above **"Target Temperature"**, continue processing and verify periodically. If enclosure temperature remains above this value, the alarm condition does not require recording as a malfunction.
		  • If efforts to increase temperature are not successful,

MALFUNCTION CODES		
Alarm Code	**Condition/Description**	**Corrective Action**
		contact your Supervisor and Maintenance Dept. NOTE: If this condition occurs prior to initiating a production order, ensure differential pressure is greater than or equal to 0.007" wc and temperature is greater than or equal to **"Target Temperature"**, initiate processing and verify periodically.

22	Red Light Illuminated	• <u>Indicates average differential pressure limits are out of range or thermal oxidizer temperature is too low.</u>
		  • Shutdown processing following the Shutdown Procedure as described under Malfunction Code A.
		  • Attempt to diagnose problem and make simple repairs.
		  • Correct as soon as possible.
		  • If attempts are unsuccessful, contact your Supervisor and Maintenance Dept.
		• DO NOT initiate any processing during this condition.

23	Yellow/Green Light Illuminated	• <u>Indicates average differential pressure limits are within range, but short-term pressure is low, less than 0.007" wc.</u>
		  • Attempt to diagnose problem and make simple repairs.
		  1) Check/ensure all doors are closed.
		  • Correct as soon as possible.
		  • Check pressure differential reading for enclosure. If gauge continues to read a value of 0.007 inches or greater, continue processing and verify periodically. If enclosure pressure remains above this value, the door failure does not require recording as a malfunction.
		  • If efforts to increase pressure differential above 0.007 " wc are not successful, contact your Supervisor and Maintenance Dept.
		
		NOTE: If this condition occurs prior to initiating a production order, ensure differential pressure is greater than or equal to 0.007" wc and temperature is greater than or equal to **"Target Temperature"**, initiate processing and verify periodically.

24	Yellow/Red Light Illuminated	• <u>Indicates average differential pressure limits are out of range and short-term pressure is low, less than 0.007" wc.</u> • Shutdown processing following the Shutdown Procedure

MALFUNCTION CODES		
Alarm Code	**Condition/Description**	**Corrective Action**
		as described under Malfunction Code A. • Attempt to diagnose problem and make simple repairs. 1) Check/ensure all doors are closed. • Correct as soon as possible. • If attempts are unsuccessful, contact your Supervisor and Maintenance Dept. • DO NOT initiate any processing during this condition.
25	Red light Illuminated	• <u>Indicates thermal oxidizer temperature is too low.</u> • Shutdown processing following the Shutdown Procedure as described under Malfunction Code A. • Attempt to diagnose problem and make simple repairs. • Correct as soon as possible. • If attempts are unsuccessful, contact your Supervisor and Maintenance Dept. • DO NOT initiate any processing during this condition.

THERMAL OXIDIZER / ENCLOSURE MALFUNCTION LOG

Malfunction Start		Malfunction Corrected		Reason for Temperature Drop / Corrective Action Plan	Malfunction Code	Job #	Process Engineering Guideline	Yds.	Product Description	Dry Weight (grm/M²)
Date	Time	Date	Time							

1. Record all instances on thermal oxidizer or malfunction.

2. Must include all yards produced during the malfunction.

3. No new order is to be initiated during a malfunction.

FORMS/Incn-TempLog

Rev. 12.05.05

Thermal Oxidizer / Enclosure Malfunction Procedures

1.0 PURPOSE

1.1 To establish all necessary actions to take place for RTO malfunctions to ensure environmental compliance.

2.0 APPLICATION

2.1 This document applies to Leaders, on all shifts, on the Coater line

3.0 PROCEDURE

3.1 Chart Recorder

3.1.1 The Temperature Chart must be changed at the beginning of the first operating shift each day on the thermal oxidizer circular chart recorder panel. This will be the responsibility of the Coater Line Leaders.

3.2.2 The previous day's chart must be removed and turned in to the Department Supervisor on a daily basis. The new chart must be installed in the recorder, aligned to the proper time, dated and initialed.

3.2 Thermal Oxidizer Temperature/ Enclosure Pressure Malfunction

3.2.1 If the thermal oxidizer temperature drops below the designated minimum set-point, the red light will activate. When this occurs, follow the instructions posted under the appropriate Malfunction Code.

3.2.2 If the enclosure pressure and/or thermal oxidizer temperature drops below a predetermined minimum value, the alarm condition will be illustrated on the post light in the Coater area. When this occurs, follow the instructions posted under the appropriate Malfunction Code.

3.2.3 A Malfunction requires an entry in the Thermal Oxidizer/ Enclosure Malfunction log, even if no production is run.

The following items must be included in that entry:

A. The date and time the malfunction occurred.
B. The time the malfunction was corrected.
C. The reason, if known, for the malfunction and the corrective action taken.
D. Record the appropriate malfunction code.
E. The job number running during the malfunction.

F. Include the necessary Process Engineering Guideline Number for each job.
G. Document the total yardage of the job produced during the malfunction, prior to shutting down.
H. Record the product description for each job.

4.0 RESPONSIBILITY

4.1 The Coater Line Leaders are responsible for changing the Thermal Oxidizer/ Enclosure Malfunction log, on a daily basis.
4.2 The Coater Leader on duty during a malfunction must fill out the "Thermal Oxidizer / Enclosure Malfunction Log" (Form K60-309-2).
4.3 The Department Supervisor will be responsible for supplying new logs on an annual basis.
4.4 The Department Supervisor and will have the authority to conduct initial training of the affected line leaders for execution of the above procedure.
4.5 The Environmental Manager will have the responsibility to maintain past years' log records for the FLA facility.

5.0 AUTHORITY

5.1 The Environmental Manager will have the authority to add or delete necessary log information to maintain compliance.
5.2 The Environmental Manager will have the authority to take corrective action if entries are not being documented correctly.
5.3 Department Supervision is required to ensure that this procedure is followed at all times.
5.4 Department Supervision is required to train all new or substitute employees as necessary.
5.5 The Plant Manager is the alternate contact if the Environmental Manager is not available.

Thermal Oxidizer Start-Up

1.0 PURPOSE

1.0 Ensure safe, efficient and consistent operation of the thermal oxidizer

2.0 APPLICATION

2.1 Gehnrich & Gehnrich (Model HDFT-40H) Thermal Oxidizer.

3.0 PROCEDURE

3.1. Thermal oxidizer startup

3.1.1 Press and hold the *black* "silent alarm" button and turn the *red handle* main power *through* switch on. Then release silent alarm button.

3.1.2 *Press the green process "start" blower button (below blower on green light), this will illuminate the white "normal limit" lamp and the green "blower on" lamp.*

3.1.3 *Press the green purge "start" button (below blue purge complete lamp), this will briefly illuminate the amber "purging normal" lamp then the "purge complete" blue lamp will stay on.*

3.1.4 *Next press and hold green "burner start" button and the silence alarm button for approximately five seconds until the relay clicks.*

3.1.5 The *green* "burner on" lamp should illuminate within ten seconds. *If not return to section 3.1.3*
When running properly the green "blower on", blue "purge complete, white "limit normal" and green "burner on" lamps are all on.

3.2.7 The thermal oxidizer must be at operating temperature if the Coater Line is in operation. If the Coater Line runs when the thermal oxidizer is not at operating temperature, the Environmental Manager must be contacted, or the Plant Manager in his absence.

4.0 RESPONSIBILITY

4.1 It is the Leader's responsibility to ensure to the Thermal Oxidizer I Start-Up Operating Procedure is followed.

5.0 AUTHORITY

5.1 The Engineering Manager has the authority to revise this procedure.

Thermal Oxidizer Shutdown

1.0 PURPOSE

1.1 Ensure the safe and efficient shutdown of the thermal oxidizer unit.

2.0 APPLICATION

2.1 Gehnrich & Gehnrich (Model HDFT-40H) Thermal Oxidizer.

3.0 PROCEDURE

3.1 Thermal oxidizer shutdown

3.1.1 *Press & hold silent alarm and stop button and the red burner off lamp will illuminate.*

3.1.2 *Allow process blower to run until temperature is below 400 °F.*

3.1.3 *Turn main power through switch off.*

4.0 RESPONSIBILITY

4.1 It is the responsibility of the Leader to ensure that the Thermal Oxidizer Shutdown Procedure is followed.

4.2 It is the 1st Shift Leader's responsibility to change the chart recorder chart on a daily basis and file accordingly.

4.3 It is the responsibility of all Shift Leaders to record all malfunction occurrences. Follow Log instructions.

5.0 AUTHORITY

5.1 The Environmental Manager has the authority to revise this document.

Operation and Maintenance plan for the Florida Coating Line Thermal Oxidizer (Pinellas County Code Sec 58-128)

Equipment:
Gehnrich & Gehnrich model HDFT-40H thermal oxidizer utilizing natural gas with a maximum input of 4.0 MMBtu per hour, design air flow rate of 12,853 ACFM or 4,000 DSCFM with .3 to .4 second residence time in burner chamber @ minimum temperature of 1350°F. The manufacturer's literature can be found here.

Maintenance Requirements:
The equipment shall be maintained in such a manner so as to maintain maximum destruction efficiency in the function of destroying volatile organic vapors from the continuous coater. The requirements established by 40 CFR Part 63 Subpart JJJJ require a minimum destruction efficiency of 95%.

Maintenance Inspection Schedule Preventive Maintenance (PM) /Log forms are on the attached pages.
PM schedule forms are printed on a Weekly/Monthly/Semi-Annual/Biennial basis and filled out during the scheduled inspections. Completed PM forms will be kept for a minimum of two years on file in the Maintenance Supervisors Office in the Thermal Oxidizer Preventive Maintenance (PM) Log Book.

Work performed outside of the PM schedule will be recorded on the "Non-scheduled Maintenance and Repair Work Log"

The attached pages include a list of type and quantity of the spare parts for the pollution control device.

Calibration:
Schneller, LLC, maintains an ISO 9001-2000 approved system that includes the thermal oxidizer temperature probe and coater booth pressure differential monitor. The pressure monitor ensures 100% capture in the PTE by maintaining a differential > .007" water equivalent to > 200 feet/min at the natural draft opening (inlet paper into the booth). Calibration occurs every 3 months.

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Emission Unit No. 003

THERMAL OXIDIZER FLA WEEKLY PM

COMPLETED BY: _____ SIGNATURE: _____ Date: _____

Operational Checks	**Parameter Range**	**Actual Parameter Value Comments:**
Check blower drive belts	Check belts for fraying and bounce. Belt is to be replaced if any indication of fray or bounce.	_____
Check fire observation port glass	Clean & replace glass as necessary for proper visual inspection. Burner box must be clearly visible	Burner box must be clearly visible Yes □ No □ If no comment: _____
Check Fire Eye for proper operation	Remove & clean if as necessary To maintain mV range of 1.8 - 2.0.	Actual mV reading: _____ Cleaned, mV reading: _____ or NA □ Replaced, mV reading: _____or NA □
Check electric control box	Clean/replace fan & filter as necessary	Fan: Cleaned □, Replaced □, NA □, Filter: Cleaned □, Replaced □, NA □,
Check operation of flame relay eye	Check flow on cooling air line Must be within 0.5 to 3.0 PSI,	Reading: ____ PSI
Check the quality of the flame and burner assembly (including the flame rod and igniter plug)	Visual check, if questionable, schedule removal of thermal oxidizer plate for interior inspection of refractory material & burner.	Visual check satisfactory Yes □ No □ Comment if No _____

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Emission Unit No. 003

THERMAL OXIDIZER FLA WEEKLY PM page 2

COMPLETED BY: _____ SIGNATURE: _____ Date: _____

Operational Checks	**Parameter Range**	**Actual Parameter Value Comments:**		
Check calibration dates on labels *(note that the date of last calibration and the next due date are listed on the label)*	Notify QA if calibration is out of date:	Within calibration date:		Date:
	Thermal oxidizer Temp. Probes F(149), or 150	Yes □	No □	_____
	Thermal oxidizer Temp. Controller F107	Yes □	No □	_____
	Thermal oxidizer Temp. Chart Recorder F138	Yes □	No □	_____
Make sure there are no air and or gas leaks in the system	Call LP Gas Company if odor is detected. Notify Environmental Department and repair any leaks in the intake or outlet vents	Gas odor:	Yes □	No □
		Air Leaks:	Yes □	No □
		If yes record comments_____ _____		
Record thermal oxidizer temp. °F	must be ≥ 1350°F	Reading: _____°F		
Record PTE pressure differential reading "/WC	to be ≥ .007"/WC	Reading: _____"/WC		
Check duct work leading to thermal oxidizer. No holes or leaks through sealant/tape		If yes record comments_____ _____		

NOTES:

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Emission Unit No. 003

THERMAL OXIDIZER FLA MONTHLY PM

COMPLETED BY: _____ SIGNATURE: _____ Date: _____

Operational Checks	**Parameter Range**	**Actual Parameter Value Comments:**
Check blower drive belts for wear	Check belts for fray and bounce. Replace belt if any wear indication	**Frayed** / Bounce (**Yes** □ **No** □ / Yes □ No □) Belt replaced Yes □ No □
Check and grease fan motor bearings	Replace worn bearings if: Play in shaft. Shaft does not turn freely. Unusual noise observed.	Unusual noise Yes □ No □ Play in shaft Yes □ No □ Shaft hard to turn Yes □ No □ Bearing replaced Yes □ No □
Check Fire Eye for proper operation	Remove & clean if as necessary To maintain mV range of 1.8 - 2.0.	Actual mV reading: _____ Cleaned, mV reading: _____ or NA □ Replaced, mV reading: ____ or NA □
Area in and around equipment is clean	Clean area if required (No: dirt, shavings, grease etc...)	Cleaning required Yes □ No □ _____
Down time recorded if applicable	Down time defined as lost production from sub standard machinery	Down Time Yes □ Hours____ or No □ If yes comments: _____
Drawings & literature used during PM are properly filed.	Documents are returned to binders & filed into cabinets and shelves	PM reference materials properly filed Yes □ No □ NA □

NOTES:

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Emission Unit No. 003

THERMAL OXIDIZER FLA SEMI-ANNUALLY PM

COMPLETED BY: _____ SIGNATURE: _____ Date: _____

Operational Checks	**Parameter Range**	**Actual Parameter Value Comments:**		
Check and grease fan motor bearings	Replace worn bearings if:	Unusual noise	Yes □	No □
	Play in shaft.	Play in shaft	Yes □	No □
	Shaft does not turn freely.	Shaft hard to turn	Yes □	No □
	Unusual noise observed.	Bearing replaced	Yes □	No □
Operate the main gas shut off cocks	Valves must be operable. Gas company to replace if necessary.	_____		
Remove the inspection plate. Observe condition of refractory material and burner	Check for cracks in:	_____		
	* refractory material	_____		
	* pre-heat tube	_____		
	* baffle plates	_____		
	* burner	_____		
	Replace / repair as required	_____		
Look for any internal problems in the system	Weld any lose baffle supports	_____		
	Weld / replace leaks in pre-heat tubes	_____		
	Check shell for hot spots	_____		

NOTES:

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Emission Unit No. 003

THERMAL OXIDIZER FLA BIENNIAL PM

COMPLETED BY: _____ SIGNATURE: _____ Date: _____

Operational Checks	**Parameter Range**	**Actual Parameter Value Comments:**
Replace the burner every other year or follow Recommendation of thermal oxidizer contractor	Replacement Record condition of burner	_____

_____

_____

_____

_____

Note:
According to service contractor, "Combustion Control Solution" burner replacement every two years as recommended by the manufacturer is overkill. Records are to be maintained, on condition of burner, for possible future assessment of frequency of burner replacement.

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Emission Unit No. 003

Non-Scheduled Maintenance Work and Repair Log

Date	Description of work performed	Completed by

PARTS LIST Up-Dated 8/30/05

Eclipse burner	1	Review for replacement every two years
Motor 20 hp	1	
Temp. Controller	2	
Honeywell flame relay	2	RA890G Primary Control
Flame relay sensor	1	
Baffle Plates	7	3/16 stainless 14” X 30 ½”
Belts	4	
Gas Solenoid valve 1 ¼	1	

Thermal Oxidizer Component Information

Gehnrich & Gehnrich Inc.
Commack, NY
Serial# 8225

Burner
Eclipse
TAH-R240
TAH-R240 serial# 02-92643
Install guide 142

Igniter
Westwood Product Inc.
I-90 series shrouded igniters
I-90-8 ("A" dim. (in)15.750) (B dim. 18640 in)

Distributor
Tempaco 12399 belcher rd. largo Fl,
Tel: (727) 532-4691

Motor
US Motor
Model: T795A Frame 256T
Volts: 480 Amps: 23.5
Rpm: 3525

Gas Solenoid valve 1 ¼
Grainger part# 3UK44
AASCO Redhat cat# JB82146
T822538S

Honeywell Protectorelay Primary Control
RA890 Base
Q270a universal sub base
HONEYWELL Inc.
1885 Douglas drive north
Minneapolis, Minnesota 55422-4386
(621) 951-1000

Millivolt Calibration

1.0 PURPOSE

To describe the method to be used in performing the calibration of millivolt gauges.

2.0 APPLICATION

To be used when calibrating any millivolt gauge which is used to demonstrate the conformance of products to specified requirements as defined in (WIQ-036).

3.0 EQUIPMENT

3.1 The equipment required to perform this calibration must be traceable to NIST requirements.

A. A precision master millivolt test gauge with a set of test leads.

4.0 PROCEDURE

4.1 Using the GaugePack software program, bring up the files of items to be calibrated. GaugePack provides information on calibration due dates, location of gauges, etc., as described in (WIQ-036).

4.2 Turn off, and or disconnect extrinsic wiring and equipment as appropriate on the millivolt circuit and place the probes from the master millivolt calibrator in the appropriate junction. Power the master millivolt calibrator to output setting as indicated in the GaugePack program calibration procedure.

4.3 Enter the measurements and all pertinent information into the GaugePack program millivolt gauge record.

4.4 If the millivolt gauge is within the specified tolerance (listed in GaugePack), complete a calibration sticker (WIQ-053) and attach to the millivolt gauge.

4.5 If the millivolt gauge cannot be calibrated within tolerance, the Maintenance Department must be notified by the QA Department using form (WIQ-054).

4.6 The procedure set forth in the Work Instruction (WIQ-036) is then followed.

4.7 After Maintenance takes the appropriate action (as detailed in WIQ-036), the QA Department verifies the millivolt gauge is back within the set tolerance, updates the GaugePack software equipment record and places a calibration sticker (WIQ-053) on the millivolt gauge.

4.8 The QA Department then generates a GaugePack calibration certificate which is kept on file.

5.0 RESPONSIBILITY

5.1 The QA Department is responsible for ensuring all millivolt gauges are calibrated when required.
5.2 The QA Department must verify that all millivolt gauge records are maintained and updated.
5.3 The QA Department ensures this Work Instruction is followed.
5.4 The QA Department is responsible for determining which millivolt gauges are to be included in the calibration system.
5.5 The QA Department is responsible for setting the calibration interval for all millivolt gauges in the calibration system.

6.0 AUTHORITY

6.1 The QA Department has the authority to remove a millivolt gauge from use if it is found to be out of tolerance.
6.2 The QA Department has the authority to return a millivolt gauge back into service.
6.3 The Department Head, Quality has the authority to revise this document.
6.4 The QA Department has the authority to modify the millivolt gauges calibration procedure and calibration for the in-house calibration system.

ENVIRONMENTAL POLICY

The purpose of this policy is to fix the responsibility to assure Schneller, LLC, meets the requirements of the current Environmental Operating Permit and protects the local Environment. Environmental Compliance requires adherence to this policy at all times.

The primary responsibility for Environmental Compliance rests with Operations. Specific policies, training, equipment and necessary responsibilities will be developed to assure that adequate actions are taken to maintain operating compliance. A secondary responsibility rests with each and every affected employee of Schneller, LLC, which includes properly following all established procedures and completing the necessary reporting.

Capture and Control devices have been installed and are properly maintained to minimize air emissions. It is imperative that this equipment and the processes they regulate be properly operated. In the event of a malfunction or operation interruption, actions are required to maintain compliance. This requires adherence to the following:

- No processing of orders on an affected source (Coater Line) will be initiated unless the respective Oxidizer is properly operating at set-point.

- All enclosure doors will remain closed while the machine is in operation or cleanup, except to enter or exit the work space.

- It is the responsibility of all Leaders operating an affected source (Coater line) to follow proper procedures for the Start-up and/or Shutdown of the Oxidizer.

- It is the responsibility of all Leaders operating an affected source (Coater line) to take immediate and appropriate action in response to any alarm condition.

- It is the responsibility of all Leaders operating an affected source (Coater line) to follow proper procedures in response to a Malfunction or interruption of the operation of the thermal oxidizer or Enclosure.