



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, ILLINOIS 60604

**DATE:** OCT 18 2016  
**SUBJECT:** CLEAN AIR ACT INSPECTION REPORT - *AMENDED*  
L'Anse Warden Electric Company, L'Anse, Michigan  
**FROM:** Molly Smith, Environmental Scientist  
AECAB (MI/WI)  
**THRU:** Sarah Marshall, Section Chief  
AECAB (MI/WI)  
**TO:** File

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**BASIC INFORMATION**

**Facility Name:** L'Anse Warden Electric Company, LLC (LWEC)

**Facility Location:** 157 South Main Street, L'Anse, Michigan 49946

**Date of Inspection:** December 17, 2015

**Lead Inspector:** Molly Smith, Environmental Scientist

**Other Attendees:**

1. Cynthia Schafer, Environmental Engineer
2. Al Clishe, LWEC Internal Consultant
3. John Polkky, LWEC Fuel Supervisor
4. Chris Anderson, LWEC Plant Manager
5. JR Richardson, LWEC Public Relations
6. Steve Puhl, Yard Manager, Fuel Contractor
7. Edward Lancaster, Michigan Department of Environmental Quality Inspector

**Purpose of Inspection:** Identify areas of noncompliance, specifically fugitive dust and opacity, as well as learn the process.

**Facility Type:** Biomass utility

**Regulations Central to Inspection:** Michigan State Implementation Plan and facility's Operating Permit # B4260.

**Arrival Time:** 8:15 am EST

**Departure Time:** 12:40 pm EST

**Inspection Type:**

- Unannounced Inspection
- Announced Inspection

**OPENING CONFERENCE**

- Credentials Presented
- CBI warning to facility provided

The following information was obtained verbally from all the LWEC attendants on the inspection, unless otherwise noted.

**Company Ownership:** Traxys purchased the LWEC on July 5, 2007 and the facility began operating as a biomass utility on October 1, 2008.

**Process Description:** The LWEC is divided into two facilities: the power plant and the fuel aggregate facility (FAF).

The power plant is where the boiler is located. The LWEC utilizes railroad ties soaked in two different materials (pentachlorophenol (penta) and creosote), tires, and wood chips as fuel for the boiler.

The FAF is located approximately a third of a mile west of the power plant. The FAF is where all processing of wood chips and railroad ties occurs. The FAF is not managed by the LWEC, but rather a contractor. Railroad ties are received by the contractor at the FAF via rail. Approximately 10 cars per day (70 cars per week) are received. The contractor unloads the whole railroad ties into an uncovered stock yard.

Only railroad ties from Canada may contain penta, which is 2-10% of the cars received. The contractor uses a chlorine identification gun to categorize the penta ties from the creosote ties. A spray-painted mark is made on the penta ties. When viewing the FAF storage yard, penta spray-painted railroad ties are mixed in with the creosote railroad ties. During the tour EPA noted that only a small number of penta ties were covered, with the remainder being dispersed throughout the yard.

The contractor has an uncovered railroad tie chipper/grinder. Railroad ties are fed into the grinder and the ground material is transported via a front loader to a three-sided enclosure with a roof. When the contractor receives a request from the power plant for a specific fuel, that fuel is then transported via front loader from the enclosure to a structure connected to a pneumatic pipe conveyor system. There is a baghouse control system on the front and back end of the pneumatic

conveyor. The contractor chips and delivers approximately 3,000-4,000 railroad ties to the power plant a day.

According to the LWEC, since October 13, 2015, except for a stack test in November 2015, LWEC has not burned any penta ties. According to the contractor, the penta ties received since October 13, 2015 are gathered and landfilled.

The tires used as fuel by the power plant are delivered directly to the power plant. The tires have already been processed and chipped. The tires are delivered via truck and deposited into an outdoor, uncontrolled storage pile direct next to the fuel storage building. Four times per day, the LWEC adds tires to a hopper with a front loader to maintain a constant supply of tire derived fuel (TDF).

Once the power plant makes a request to the FAF, the fuel is sent via the pneumatic pipe system to the power plant. The pipe is directed into an enclosed, baghouse controlled, receiving hopper at the power plant. A complete enclosure was constructed for the receiving hopper during a December 2015 shut-down.

From the receiving hopper, the fuel is conveyed into a fuel storage building, referred to by the LWEC as the "reclaimers." Fuel is deposited into one of three bins in the reclaimer building. Metal drag bars are constantly rotating across the top of each reclaimer pile to move fuel towards the boiler conveyor. Penta ties are mixed with creosote ties at varying proportions and the LWEC is unable to accurately account for the amount of penta ties being processed at any given hour. This is currently not an issue because the facility is not burning penta ties. Only wood chips and railroad ties are stored in the reclaimer building. The building can store enough fuel to run the power plant for a day to a day and a half. As the fuel leaves the reclaimer building, tires are added onto the conveyor belt prior to being directed into the boiler.

The fuel is fed into the boiler through a screw conveyor. After the fuel has been burned, the remaining ash is moved along a shaker grate and it is deposited into a wet ash conveying system. The system is water sealed within the boiler. The ash is pulled through on a chain and drained slightly before being deposited into the wet ash storage building. The ash is sent to a landfill via truck.

An electrostatic precipitator (ESP) was installed to control particulate matter in the spring of 1975. The ESP was designed for a boiler operating at 250,000 pounds of steam an hour, while the LWEC achieves 210,000 pounds of steam an hour. The system is a Wheelabrator Frye unit. Prior to the ESP, the air stream passes through two multiclones in series.

The ESP unit made up of a series of wire plates that are rapped clean every four minutes. All material that is collected by the ESP unit is returned to the wet ash conveyor system. The LWEC has a continuous opacity monitor (COMs) unit on the exit stack, after the boiler and ESP.

The LWEC conducts soot blowing three times a day for 25-30 minutes. Soot blowing is done in order to clean the boiler system of any material build-up. The LWEC attempts to soot blow on a set schedule: 8:00am, 2:00pm, and 11:00pm daily. The ESP is operated during soot blowing.

## TOUR INFORMATION

**EPA toured the facility:** Yes. EPA toured both the power plant and the fuel aggregate facility.

**Data Collected and Observations:** EPA walked the entire power plant process from start to finish. During the tour EPA stopped into the power plant control room and made the following notations on the operating ESP around 10:30am EST:

ESP	Chamber #1	Chamber #2	Chamber #3
Currents	0.0244	0.0260	53
Kilovolts	17	35	27
Spark Rate	31	2	13

Also in the control room, EPA noted the following opacity readings from the facility's COMs unit around 10:30am EST:

	Opacity Percentage
Instantaneous COMS Readings	3.9%
6-Minute Rolling Average	2.1%
1-Hour Rolling Average	2.0%

The operator in the control room tracks the receipt of all fuel from the FAF. During the tour the following tonnages were being electronically tracked for that calendar day:

- 137.37 tons of woodchips;
- 79.04 tons of railroad ties (creosote); and
- 2.02 tons of miscellaneous.

During the tour of the power plant, EPA staff noted railroad tie and/or wood chip dust below the conveyor to the power plant. The dust was frozen to the ground; however EPA staff discussed the generation of dust as well as the clean-up procedures by the LWEC. No other visible fugitive dust or opacity was noted during the tour. No noxious or unpleasant odors were present during the tour.

**Field Measurements:** were taken during this inspection. EPA used a photoionization detector (PID) during the tour to take readings of methane (CH<sub>4</sub>), volatile organic compounds (VOCs), hydrogen sulfide (H<sub>2</sub>S), carbon monoxide (CO), and oxygen (O<sub>2</sub>). The unit was calibrated the morning of December 17, 2015. Due to calibration challenges with the unit, the readings are not being considered reliable and are not reported here.

## RECORDS REVIEW

EPA requested the following documents during the inspection:

- Soot blowing standard operating procedures, inspection procedures, and diagram; and
- ESP operating information and diagrams.

PHOTO LOG

1. Fuel bin
2. Wet ash drop-off from fuel grate
3. Receiving hopper, unloading bin
4. Tire pile
5. Receiving hopper, unloading bin
6. Conveyor from unloading bin to fuel bin (reclaimers)
7. Railroad ties
8. Bin 2, woodchips, in fuel bin building (reclaimers)
9. Bin 2, woodchips, in fuel bin building (reclaimers)
10. Bin 3, railroad ties, in fuel bin building (reclaimers)
11. Post tire derived fuel added to fuel mix
12. Stack and ESP chambers
13. Grinder at FAF
14. Grinder at FAF

CLOSING CONFERENCE

**Concerns/Compliance Assistance:** EPA informed the LWEC that an inspection report would be generated and the company did not request any information be considered Confidential Business Information. EPA inspectors reiterated to the LWEC that an investigation was ongoing, as complaints are continually received from the residence of L'Anse, Michigan.

SIGNATURES

Lead Inspector:

*Molly Smith*

Date:

*9/12/16*

Section Chief:

*Sarah Marshall*

Date:

*10/18/16*