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**ENGINEERED FUEL PELLETS TRIAL
AMENDMENT TO THE
FUGITIVE EMISSIONS CONTROL PLAN**



L'ANSE WARDEN ELECTRIC COMPANY, LLC.
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Revised October 2017

TABLE OF CONTENTS

Section	Page
1 INTRODUCTION	1-1
2 POTENTIAL SOURCES OF FUGITIVE DUST	2-1
2.1 DSI System	2-1
2.2 Pellet Storage	2-1
3 MONITORING AND CONTROL PROCEDURES	3-1
3.1 DSI System	3-1
3.2 Pellet Storage	3-2

LIST OF APPENDICES

Appendix A Example Daily Observation Log

SECTION 1

INTRODUCTION

The L'Anse Warden Electric Company, LLC. (LWEC) Facility ("the Facility") is located in L'Anse, Baraga County, Michigan. The Facility is a biomass-fired electric generating facility. The standard industrial classification (SIC) code for the Facility is 4931. The Facility consists of the Generating Station and a Fuel Aggregation Facility (FAF). The Facility is operating under the State of Michigan Renewable Operating Permit (ROP) Number MI-ROP-B4260-2011. Construction activities were authorized under Permit to Install (PTI) 168-07, issued on 29 October 2007 and subsequent permit modifications.

PTI 53-17, issued on 18 August 2017 allows for a 180 calendar day trial use of engineered fuel pellets (pellets) as part of LWEC's fuel stream. This amendment to LWEC's Fugitive Emissions Control Plan (FECP) has been prepared to incorporate the temporary storage of engineered fuel pellets (pellets) and the dry sorbent injection (DSI) system into LWEC's fugitive emission control program. All other aspects of LWEC's most recent FECP remain in effect.

SECTION 2

POTENTIAL SOURCES OF FUGITIVE DUST

2.1 DSI SYSTEM

LWEC will be installing additional add on emission control technology in the form of a DSI system for the pellet trial period to further reduce sulfur dioxide (SO₂) and hydrogen chloride (HCl) emissions. DSI consists of the direct injection of an alkaline reagent material into the flue gas before the particulate matter (PM) control equipment. LWEC will likely require use of fans and (for longer-term use) a storage silo to receive, store, mix, and transfer the reagent to the proposed DSI. Initially during the trial period, a smaller scale super sack delivery system will be used which consists of a bulk bag unloader and reagent injection system instead of the silo system to facilitate trial use of more than one reagent during optimization of the process.

Section 3.1 details the engineering controls and procedures for minimizing fugitive dust emissions associated with DSI system.

2.2 PELLETS STORAGE

With the exception of Tire Derived Fuel (TDF) and pellets, fuel is unloaded into an enclosed receiving hopper near the fuel storage building at the Generating Station. The TDF is delivered directly to the fuel storage building area and stored and metered separately. Pellets, during their trial period, will also be delivered to the fuel storage building area adjacent to the TDF metering bin and to the enclosed receiving hopper via truck delivery. Depending on usage rates, pellets may also be delivered to the off-site Fuel Aggregation Facility (FAF) for mixing at known ratios with biomass fuels as they are brought to the Generating Station.

Section 3.2 details the procedures for controlling fugitive dust emissions associated with pellet storage.

SECTION 3

MONITORING AND CONTROL PROCEDURES

Visual observations are conducted by staff at the Generating Station and FAF on a daily basis to evaluate the effectiveness of the fugitive dust control measures. Visual observations at the Generating Station and FAF are documented on daily logs by LWEC supervisory personnel or their designee(s). An example revised log for the Generating Station during the pellet trial period is included in **Appendix A**.

The following control procedures are utilized to minimize fugitive dust emissions. Visual monitoring will be used as the indicator of adequate dust control. If visual monitoring indicates these procedures are not sufficient for minimizing fugitive dust emissions, corrective action will be taken such as but not limited to development of alternate filtration for the reagent silo exhaust stack, or other action as may be appropriate to the situation observed and a revised FECP amendment will be submitted to MDEQ AQD for review and approval.

3.1 DSI SYSTEM

The DSI System uses the storage of reagent in super sacks (initially) and a silo (for longer-term operation). These enclosed storage containers minimize the potential for fugitive emissions from this source. The most likely source of dust emissions is from material transfer into the silo and out of the storage containers. A filter cartridge will be used in the silo exhaust pipe to minimize the potential for dust emissions from the silo during filling. Regularly scheduled maintenance of piping, hoses, and other material handling equipment during operation and visual observations during material transfer will minimize the potential for dust generation and allow immediate response to a leak or spill.

In the event of spillage onto a paved area, the spilled material will be collected to minimize fugitive dust emissions and to ensure that reagent is not tracked away from the DSI system area. Spilled reagent material will be removed each day or sooner commensurate with the weather

conditions (such as windy weather) so as to minimize the potential for dust generation. The spilled reagent material will be placed back into the DSI system or appropriately disposed. Cleaning consists of dry material removal (i.e. shovel, broom, and/or vacuum) or wetting the area with water to facilitate cleanup.

3.2 PELLET STORAGE

3.2.1 Generating Station

The pellets will be delivered to the Generating Station by truck. Roadways at the Generating Station are paved, reducing the potential for dust generation from Facility traffic. The design of the pellet fuel does not lead to the generation of dust but could generate particulates if the pellets are spilled or broken down. Roadways will be swept weekly, unless the presence of spilled material dictates more frequent cleaning, or weather or precipitation events such as snowfall prevent use of the sweeper. Documentation of climatic conditions, presence of material, and roadway sweeping will be made in the daily log in **Appendix A**.

The trucks delivering pellet fuel to the Facility are required to comply with the Michigan Vehicle Code, including tarpaulin coverage of loads in open-top trailers.

The pellets will be unloaded from the trucks into the enclosed receiving hopper near the fuel storage building and/or onto the pavement adjacent to the TDF storage area. Concrete barriers will be used to bound the pellet pile to minimize the potential for pellets to leave the immediate management area adjacent to the TDF metering bin. In addition, mesh has been applied to the Facility perimeter fencing downhill from the storage area to capture pellets that may escape the primary concrete barrier containment. The pellet pile will preferentially be stored in a manner to minimize precipitation contact to the extent possible.

Once the pellets are added to the fuel stream, the control measures for fuel storage, conveying, and use already identified in LWEC's FECP apply.

3.2.2 FAF

Pellets may also be delivered to the FAF for blending into the fuel stream. The pellets will be unloaded in a manner similar to woodchips and then blended into the biomass fuel for loading and delivery by truck to the Generating Station. The dust suppression and monitoring measures already identified in LWEC's FECP for the FAF, including daily monitoring, will apply to pellets handled and blended at the FAF.

APPENDIX A

EXAMPLE DAILY OBSERVATION LOG

**L'ANSE WARDEN ELECTRIC COMPANY, LLC
GENERATING STATION
PELLET TRIAL DAILY FUGITIVE DUST LOG**

Date: _____ Time: _____ Operator: _____

Precipitation: _____ Temperature: _____ Wind Speed: _____ Weather: _____

Area Inspected	Exception?	Area Inspected	Exception?
General		Fuel Handling Area	
Fugitive fuel or ash has been cleaned up		Fuel Receiving Hopper Building	
Fugitive fuel or ash returned to transport, hopper, pile or bin		Hopper to Fuel Storage Building conveying system	
Fuel and ash properly stored		Fuel Storage Building	
Areas are generally clean and free of fugitive dust		Stockpiled fuels outside building stored properly and pile not present more than five days	
No leaks in DSI equipment and piping. Equipment functioning. Filter(s) in-place.		Main conveying system from Fuel Storage Building to plant	
		Operating conveyor equipment is enclosed or covered	
Ash Handling Area		TDF storage area	
Ash hoppers		Pellet storage area	
Precipitator ash screw conveyors		Daily Fuel Procurement and Monitoring Plan Check	
Bottom ash wet drag chain and ash unloading chain (no leaks and providing approx. 15-30% moisture, use reasonable judgement)		Ground creosote-treated wood derived fuel (CDF) spot check for consistency and foreign material	
Ash Storage Building			
Roadways			
Roadways clean and swept at least weekly			

*Report exceptions with an "x" only and explain in comments.

Spills are cleaned up on a daily basis and noted in comments

Supervisory Review: Review operator logs to verify that fugitive emissions checks have been completed.

Acceptable condition _____ Other (detail below) _____

Comments:

Follow-up Required:

