

FUEL PROCUREMENT AND HANDLING PLAN

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Submitted to:

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Air Quality Division
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1.0 OBJECTIVE

Viking Energy of Lincoln (VEL) has established the procedures described in this *Fuel Procurement and Handling Plan* to ensure that only acceptable fuel streams will be received and that only an acceptable fuel mixture will be burned. VEL will not accept fuel streams which do not conform to the characteristics described, and this plan establishes procedures for mixing and blending each of the fuel streams into an acceptable fuel mixture. These procedures are designed to ensure compliance with the requirements of the most current Renewable Operating Air Permit.

2.0 DESCRIPTION OF ALTERNATIVE FUEL STREAMS

A description of each of the fuel streams is provided. Each of the following fuel streams will be subject to the procedures described in Section 3 of this plan.

2.1 Wood Preserved with Creosote

Creosote is a coal-tar distillation derivative meeting standards set out in documents published by the American Wood Preservers Association (AWPA). Wood is treated with creosote to increase resistance to decay caused by organisms, insect pests, and moisture retention. Typical products include railroad ties, marine pilings, and some utility poles. Creosote is the preservative found in virtually all railroad ties in service and being specified today. Most ties, and many poles and pilings removed from service were creosote treated before placement.

2.2 Wood Preserved with Pentachlorophenol

While no longer widely used for consumer products, the “penta” treatment process is still used in preservation of utility pole stock.

2.3 Wood Containing Adhesives (Particle Board and Plywood)

Phenol formaldehyde and urea formaldehyde resins are the most commonly used adhesives for layered, oriented strand, particle, and fiber board manufacturing. They offer adhesive and water resistance properties. Typically, plywood contains 2 to 4 percent urea and phenol formaldehyde resins, and particleboard contains 5 to 15 percent urea formaldehyde resins by weight.

2.4 Tire Derived Fuel

The only non-wood supplemental fuel source that is used as fuel is chipped tires. Tires shredded into pieces are called tire-derived fuel.

3.0 FUEL PROCESSING PROCEDURES

Viking Energy burns the four supplemental fuels along with the existing fuel source, untreated wood waste. The four alternate fuels and untreated waste wood will be commingled into a common wood fuel and transported to the boiler using the existing feed system.

3.1 Pre-acceptance Inspection

A potential supplier of a fuel stream will be provided with a fuel specification and be required to certify that the fuel stream meets the specification. A pre-acceptance inspection by a representative of Viking Energy is typically conducted to verify conformance. Once this pre-acceptance procedure has been completed, trucks from the supplier will be authorized to carry loads to the plant.

3.2 Fuel Receipt and Inspection

Each truck load of fuel is inspected, weighed and unloaded separately. The visual inspection is conducted to ensure the materials appear representative of the characterization of the fuel stream made during the pre-acceptance inspection. The appearance of non-conforming materials within an incoming load of fuel material from an existing supplier will be reconciled with the supplier or the load will be returned to the supplier.

A log of the weight of each truck load will be maintained, and a running total of the weight of each type of alternative fuel will be compared to the maximum fuel receipt limit. Additional shipments of an alternative fuel will not be received for the remainder of the calendar month if the limit for that fuel will be exceeded.

3.3 Stockpile and Blending of All Wood Fuels

Shipments of wood fuel are unloaded from tractor trailer trucks into a receiving hopper. The receiving hopper is equipped with a drag chain system which transfers the wood through a series of conveyors, past a magnet, through a screen for proper sizing then onto a radial stacking conveyor which discharges into an outdoor wood storage pile.

The process of conveying fuel chips onto the stockpile provides some degree of mixing due to the height of the stockpile and spread of the load over the stockpile. Typically, the fuel stockpile is 50 feet high and approximately 100 feet at the base. The length of the stockpile progresses in an arc along the tip of the radial stacking conveyor and can be as long as 400 feet. The stockpile can occupy approximately 1,000,000 ft³, or approximately 37,000 yd³. A typical truck load contains approximately 100 yd³ of wood chips, only a small fraction of the total stockpile, and the stockpile is suitably large enough to providing blending.

Each truck load of fuel is added to the stockpile by the conveyor, is dropped onto the top, and spreads in a layer on each side. Additional mixing into the stockpile

may occur when a front-end loader and/or a bulldozer is used to move the fuel stock to the reclaim hopper. Operators of the loader and dozer will spread any noticeable collection of one fuel type into overall mix with their equipment.

Alternative wood fuels that are unloaded to be mixed over the reclaim pit will be limited to the daily amount that can be consumed that is specified in the most current ROP. These loads are weighted before adding to reclaim pit. In the reclaim pit, alternative fuels will be mixed with traditional wood fuel to create a wood fuel mix. This wood fuel mix is reclaimed from the reclaim pit with an under pile reclaim system and by passing through a second sizing screen, magnetic separator, hog and high incline conveyor belt which conveys it to the metering bin. The metering bin supplies the fuel to the boiler.

3.4 Boiler Feed

The metering bin is a storage hopper equipped with variable speed augers that supply wood fuel to air-swept spouts which feed into the boiler furnace. The metering bin capacity will operate the facility for approximately one hour.

3.5 Alternate Feed Method

Any one of the supplemental fuel stream(s) may be segregated from the commingled fuel and fed to the boiler separately. The other streams will be utilized as a commingled fuel in parallel with this segregated fuel feed method. This segregated fuel stream may be stored separately and transported by front-end loader or unloaded directly from trucks to the feed system for the individual fuel. The feed system for the segregated fuel will be an auxiliary conveyor or auger which carries the fuel onto a second high incline conveyor. The segregated fuel will be fed at a rate that is less than the permit's annual feed rate limit. The conveyor transports the fuel into the metering bin where the segregated fuel is mixed with the commingled fuel. In no case will the feed rate of any fuel exceed that specified in the most current Renewable Operating Permit.

3.6 Blending of TDF Fuel

Since TDF is a non-wood fuel, it has its own feed system. A TDF hopper and conveyor are used to blend TDF with wood fuel feed. The amount of TDF that is put in the hopper is monitored to not exceed daily amount permitted. The TDF that leaves the hopper/conveyor is mixed with the wood fuel that is entering the metering bin that supplies the boiler. The TDF hopper has a variable speed motor to control the amount of TDF being blended. In no case will the feed rate of the TDF exceed that specified in the most current Renewable Operating Permit.

RECORDKEEPING AND CALCULATIONS

Viking Energy of Lincoln will maintain a record of the fuels received and fuels consumed on a daily and monthly basis of each of the alternate fuels. A log of the weight of each truck load and a running total of the weight of each type of alternate fuel will be maintained. A separate log will be maintained for each of the five alternate fuels. The permit requires that a daily total of each alternative fuel be kept. The totals will be entered at the end of each day in a log. The permit also requires that a calculation be made by the fifth day of each calendar month for each of the alternate fuels received. This is done to ensure that the twelve month rolling average is not exceeded. This information may be maintained electronically rather than manually on the form shown. An example of the typical log and calculation are as follows:

Example Data for 12 months:

Month	Tire-Derived Fuel Received (tons/month)
JAN	1186
FEB	942
MAR	1599
APR	873
MAY	1227
JUN	1425
JUL	1102
AUG	1377
SEP	1480
OCT	700
NOV	1196
DEC	949
TOTAL:	14056

New January Data: 979 tons received

Calculations:

Summation of previous 11 months above (Feb – Dec):	13,107
New January Total	979
New 12-month fuel received.....	14,086
12-month rolling receive limit	16,060
Allowable Next Month (16,060 – 14,086).....	1,974

Typical Fuel Received Log

VIKING ENERGY OF LINCOLN			DATE:	
TKT#	TIME	SUPPLIER'S NAME	FUEL TYPE	NET TONS
1				
2				
3				
4				
5				
6				
7				
8				
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12				
13				
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