IES ENGINEERS

1720 Walton Road Blue Bell, PA 19422 610-828-3078 Fax 610-828-7842

March 29, 2013

HAND DELIVER
Mr. Raymond Kempa, P.E.
Environmental Engineer Manager -- New Source Review
Pennsylvania Department of Environmental Protection
2 Public Square
Wilkes-Barre, PA 18711

MAR 29 2013

Subject: Plan Approval Application
Confidential Version
Energy Production Facility
Delta Thermo Energy A, LLC
Allentown, Pennsylvania
IES Project No. EV120894.04

Dear Mr. Kempa:

On behalf of Delta Thermo Energy A, LLC (DTE), IES Engineers (IES) is pleased to submit an original and two copies of the enclosed Plan Approval Application (including a CD containing the results of the confidential Dispersion Modeling Analysis) for the operation of a commercial-scale Energy Production facility. The facility will produce fuel from municipal solid waste (MSW) and sludge from the City of Allentown Waste Water Treatment Plant to generate electricity for internal use and sale to the electric grid. The facility will be located at 112 Union Street, Allentown, Lehigh County.

Please note that the enclosed application contains proprietary information, trade secrets, and intellectual property rights. Release of this information to a third party could jeopardize DTE's competitive position in the industry. We request that the Department safeguard the confidential information in this application pursuant to 25 Pa. Code §127.12(d) of the Department's Air Resources Regulations. Accordingly, we are enclosing two separate plan approval applications. One is marked **"Public"** and contains only general information and emission data. The other application is marked **"Confidential"** and should not be disclosed or made publicly available. In addition to the protections provided by 25 Pa. Code Section 127.12(d), the application should be considered exempt from public disclosure under Section 708(b)(11) of the Pennsylvania Right-to-Know Law. Under the Right-to-Know Law, the application marked **"Confidential"** should not be considered a public record because it would reveal trade secrets or other confidential proprietary information.

On September 24, 2010, DTE submitted a Request for Determination of Requirement for Plan Approval/Operating Permit (RFD) to construct a research & development energy production facility. On October 14, 2010, the Department approved this RFD (No. 1737), authorizing construction and operation of the facility. In the intervening period, the facility fundamental

design has been finalized, allowing DTE to operate it on a full-scale, commercial basis, rather than only on a research & development basis. The emissions of all pollutants from the full-scale facility will be of the same magnitude allowed in the RFD, and, with the incorporation of appropriate emission control devices, will be significantly less than the thresholds for research and development facilities published in the Department's current plan approval exemption listing, dated July 26, 2003. Accordingly, DTE believes that construction of the facility can be initiated under the approved RFD, prior to issuance of the plan approval.

We have enclosed a check in the amount of $1,000, payable to the "Commonwealth of Pennsylvania, Clean Air Fund" fee for the Department's processing of this application.

Should you have any questions concerning this request, please do not hesitate to contact me or Mr. Robert Van Naarden of DTE at (215) 809-1139.

Very truly yours,

Robert W. Schlosser, P.E.
Principal Project Manager

Enclosure
cc: R. Van Naarden, DTE
M. Bonilla, DTE
J. Bolstein, Fox Rothschild
A. Soni, IES

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1720 Walton Road Blue Bell, PA 19422 610-828-3078 Fax 610-828-7842

CONFIDENTIAL VERSION

PLAN APPROVAL APPLICATION
FOR AN
ENERGY PRODUCTION FACILITY

ALLENTOWN, PENNSYLVANIA

SUBMITTED BY:

DELTA THERMO ENERGY A, LLC
1210 NORTHBROOK DRIVE, SUITE 100
TREVOSE, PENNSYLVANIA 19053

SUBMITTED TO:

AIR QUALITY PROGRAM
PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST REGIONAL OFFICE
WILKES-BARRE, PENNSYLVANIA 18711

MARCH 2013
IES PROJECT NO. EV120894.04

[!] CONFIDENTIAL

2700-PM-AQ0021 Rev. 6/2004

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

ubmit in Triplicate

MAR 29 2013

COMBUSTION UNIT

Application for Plan Approval to Construct, Modify or Reactivate an Air Contamination Source and/or Install an Air Cleaning Device

This application and the General Information Form (GIF) must be included in the submittal

Before completing this form, read the instructions provided with this form.

Section A - Facility Name, Checklist and Certification

Organization Name or Registered Fictitious Name/Facility Name: Delta Thermo Energy A, LLC

DEP Client ID# (If Known): 300555

Type of Review required and Fees:

Source which is not subject to NSPS, NESHAPs, MACT, NSR and PSD: $1,000
Source requiring approval under NSPS or NESHAPS or both: ..... $_____
Source requiring approval under NSR: ..... $_____
Source requiring the establishment of a MACT limitation: ..... $_____
Source requiring approval under PSD: ..... $_____

Applicant's Checklist

Check the following list to make sure that all the required documents are included.

General Information Form (GIF)

Combustion Unit Plan Approval Application

Compliance Review Form or provide reference of most recently submitted compliance review form for facilities submitting on a periodic basis: _____

Proof of County and Municipal Notifications

Permit Fees

Addendum A: Source Applicable Requirements (only applicable to existing Title V facility)

Certification of Truth, Accuracy and Completeness by a Responsible Official

I, **Robert Van Naarden**, certify under penalty of law in 18 Pa. C. S. A. §4904, and 35 P.S. §4009(b) (2) that based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate and complete.

(Signature): Robert Van Naarden Date: 3/28/13

Name (Print): Robert Van Naarden Title: CEO

OFFICIAL USE ONLY

Application No. _____ Unit ID _____ Site ID _____
DEP Client ID #: _____ APS. ID _____ AUTH. ID _____
Date Received _____ Date Assigned _____ Reviewed By _____
Date of 1st Technical Deficiency _____ Date of 2nd Technical Deficiency _____
Comments: _____

Section B - Combustion Unit Information

1. Combustion Units: ☐ Coal ☐ Oil ☒ Natural Gas (Startup Only) Other: Pulverized Fuel Product produced from municipal solid waste and sewage sludge

Description: Complete Combustion Chamber (CCC)

Manufacturer	Model No.	Number of units
Jasper (or equal)	Jasper (or equal)	1

Maximum heat input (Btu/hr)	Rated heat input (Btu/hr)	Typical heat input (Btu/hr)	Furnace Volume
76,280,000	76,280,000	76,280,000	

Grate Area (if applicable)	Method of firing

Indicate how combustion air is supplied to boiler

Indicate the Steam Usage:

Mark and describe soot Cleaning Method: - N/A

i. Air Blown
ii. Steam Blown
iii. Brushed and Vacuumed
iv. Other _____
v. Frequency of Cleaning _____

Maximum Operating schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	320	7,680

Operational restrictions taken or requested, if any (e.g., bottlenecks or voluntary restrictions to limit potential to emit)

Capacity (specify units)

Per hour	Per day	Per week	Per year
4.954 ton/hr PF	118.9 ton/day PF	832.3 ton/wk PF	38.047 ton/yr PF

Typical Operating schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	320	7,680

Seasonal variations (Months): If variations exist, describe them.

Operating using primary fuel: _____ From _____ to _____
Operating using secondary fuel: _____ Form _____ to _____
Non-operating: From _____ to _____

2. Specify the primary, secondary and startup fuel. Furnish the details in item 3.

Pulverized fuel produced from municipal solid waste and sewage sludge in the RRS is burned in the CCC. The CCC is equipped with a 1.1 MMBTU/hr natural gas-fired burner for startup. Startup time is estimated to require 8 hours and occur 3 times per year.

Section B - Combustion Unit Information (Continued)

3. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number	GPH @ 60°F	X 10^3 Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number	GPH @ 60°F	X 10^3 Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number	GPH @ 60°F	X 10^3 Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas Pipeline	1,079 SCFH	25,896 SCFH/year	gr/100 SCF		1,020 Btu/SCF
Gas (other)	SCFH	X 10^6 Gal	gr/100 SCF		Btu/SCF
Coal					
Other* Pulverized Fuel	4.954 ton/hr	38,047 ton/yr		11.4	9,038 BTU/lb

* Note: Describe and furnish information separately for other fuels in Addendum B.

4. Burner

Manufacturer	Model Number	Type of Atomization (Steam, air, press, mech., rotary cup)
Custom	TBD	

Number of Burners	Maximum fuel firing rate (all burners)	Normal fuel firing rate

If oil, temperature and viscosity.

Maximum theoretical air requirement

Percent excess air 100% rating

Turndown ratio

Combustion modulation control (on/off, low-high fire, full automatic, manual). Describe.

Main burner flame ignition method (electric spark, auto gas pilot, hand-held torch, other). Describe.

5. Nitrogen Oxides (NO_x) control Options

Mark and describe the NO_x control options adopted

Low excess air (LEA)	**Flue gas recirculation**	Other **SCR with ammonia injection**
Over fire air (OFA)	Burner out of service	
Low-NO_x burner	Reburning	
Low NO_x burners with over fire air	Flue gas treatment (SCR / SNCR)	

Section B - Combustion Unit Information (Continued)

6. Miscellaneous Information

Describe fly ash reinjection operation
N/A

Describe, in detail, the equipment provided to monitor and to record the source(s) operating conditions, which may affect emissions of air contaminants. Show that they are reasonable and adequate.

See Attachment 7

Describe each proposed modification to an existing source.

N/A

Describe how emissions will be minimized especially during start up, shut down, combustion upsets and/or disruptions. Provide emission estimates for start up, shut down, and upset conditions. Provide duration of start up and shut down.

Good combustion and engineering practices, operation and maintenance in accordance with manufacturer recommendations, and the use of clean fuel (natural gas) during startup.

Describe in detail with a schematic diagram of the control options adopted for SO_2 (if applicable).
See Attachment 2 and Figure 2-1.

Anticipated milestones:

Expected commencement date of construction/reconstruction: _____
Expected completion date of construction/reconstruction: _____
Anticipated date(s) of start-up: _____

Section C - Air Cleaning Device

1. **Precontrol Emissions*** ***See Attachment 3***

Emission Rate

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM					
PM_{10}					
SOx					
CO					
NO_x					
VOC					
Others: (e.g., HAPs)	-----	-----	-----		-----

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. **Gas Conditioning**

Water quenching ☒ YES ☐ NO Water injection rate 12 GPM

Radiation and convection cooling ☐ YES ☒ NO

Air dilution ☐ YES ☒ NO
If YES, _____ CFM

Forced draft ☐ YES ☒ NO

Water cooled duct work ☐ YES ☒ NO

Other _____

Inlet volume
41,767 ACFM @ 320 °F

Outlet volume
34,226 ACFM @ 135°F 17.3 % Moisture

Describe the system in detail.

See Attachment 2

Section C - Air Cleaning Device (Continued)

3. Inertial and Cyclone Collectors --

Manufacturer	Type	Model No.
Ducon (or equal)	Twin Cyclone	810, Size 2-635

Pressure Drop (in. of water)	Inlet Volume	Outlet Volume
5	56,760 ACFM @ 600 °F	56,700 ACFM @ 600 °F 11.4 % Moisture

Number of Individual Cyclone(s) 2	Outlet Straightening Vanes Used? ☐ Yes ☒ No

Length of Cyclone(s) Cylinder (ft)	Diameter of Cyclone(s) Cylinder	Length of cyclone(s) cone (ft)
91.5 inches	72 inches	See Attachment 2

Inlet Diameter (ft) or Duct Area (ft^2) of Cyclone(s)	Outlet Diameter (ft) or Duct area (ft^2) of cyclone(s)
45¾ inches x 45¾ inches	30.5 inches diameter

If a multi-clone or multi-tube unit is installed, will any of the individual cyclones or cyclone tubes be blanked or blocked off?

No

Describe any exhaust gas recirculation loop to be employed.

None

Attach particle size efficiency curve

See Attachment 2

Emission data -- See Attachment 3

Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

3. ☒ SELECTIVE CATALYTIC REDUCTION (SCR)
☐ SELECTIVE NON-CATALYTIC REDUCTION (SNCR)
☐ NON-SELECTIVE CATALYTIC REDUCTION (NSCR)

Equipment specifications

Manufacturer	Type	Model No
Ducon (or equal)	Reducing Catalyst	NR-90, Size 36

Design inlet volume (SCFM)	Design operating temperature (°F)
56,760 acfm @ 600 °F	600

Is the system equipped with process controls for proper mixing/control of the reducing agent in gas stream? If yes, give details.
No

Attach efficiency and other pertinent information (e.g., Ammonia, urea slip).
Ammonia slip = 5 ppm

Operating parameters

Volume of gases handled (ACFM) 56,760 @ 600 (°F)

Operating temperature range for the SCR/SNCR/NSCR system (°F)	From	To
	550 °F	650 °F

Reducing agent used, if any.	Oxidation catalyst used, if any.
Ammonia solution	None

State expected range of usage rate and concentration.
Urea usage = 3 lb/hr

Service life of catalyst	Ammonia slip (ppm)
2-3 years	5

Describe fully with a sketch giving locations of equipment, controls system, important parameters, and method of operation.
See Attachment 2

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.
Loss of ammonia injection and high pressure drop will be alarmed

See Attachment 2.

Emissions data -- *See Attachment 3*

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

). Fabric Collector

Equipment Specifications

Manufacturer	Model No.	
Ducon (or equal)	UNF-1, Size 64 (or equal)	☐ Pressurized Design ☒ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?
1	640	☐ Yes ☒ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No
N/A

Are temperature controls provided? (Describe in detail) ☒ Yes ☐ No
Process controls associated with operating the boiler

Dew point at maximum moisture 120 °F | Design inlet volume 28,380 SCFM

Type of Fabric
Material P84 ☐ Felted ☒ Membrane
Weight _____ oz/sq.yd ☐ Woven ☐ Others: List: _____
Thickness _____ in ☐ Felted-Woven

Fabric permeability (clean) @ ½" water-Δ P _____ CFM/sq.ft.

Filter dimensions 6" diameter x 14' length Diameter/Width 6" diameter

Effective area per filter: 22 each, or 14,080 SF (total) | Maximum operating temperature (°F) 450

Effective air to cloth ratio Minimum 3:1 Maximum _____

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders, and exhaust ductwork, location of each pressure and temperature indicator should be attached. Will be provided upon completion of engineering

Operation and Cleaning

Volume of gases handled
41,767 ACFM 320 °F

Pressure drop across collector (in. of water). 4-6 inches w.g.
Describe the equipment to be used to monitor the pressure drop.

Type of filter cleaning
☐ Manual Cleaning ☐ Bag Collapse ☐ Reverse Air Jets
☐ Mechanical Shakers ☐ Sonic Cleaning ☒ Other: Pulse jet
☐ Pneumatic Shakers ☐ Reverse Air Flow

If compressed air is required for collector operation, describe the equipment with the compressor to provide dry air free from oil. Compressor will be equipped with oil separator and desiccator to provide treated air

Cleaning Initiated By
☐ Timer Frequency if timer actuated _____
☒ Expected pressure drop range 4 to 6 in. of water ☐ Other Specify _____

Does air cleaning device employ hopper heaters, hopper vibrators, or hopper level detectors? If yes, describe.
No

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.
High pressure drop alarm

Emissions Data -- *See Attachment 3*

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

5. Wet Collection Equipment: Packed Column Scrubber

Equipment Specifications

Manufacturer	Type	Model No.
Ducon (or equal)	Vertical packed column	CAT, Size 96

Design Inlet Volume (SCFM)	Relative Particulate/Gas Velocity (ejector scrubbers only)
34,226 ACFM @ 135 °F	11.4 feet/second

Describe the internal features (e.g., variable throat, gas/liquid diffusion plates, spray nozzles, liquid redistributors, bed limiters, etc.).
NO variable throat. Spray nozzles are used to inject water to the packing.

Describe pH monitoring and pH adjustment systems, if applicable.
pH of the recycle liquor will be maintained between 6 and 7.5 using 20% caustic solution.

Describe mist eliminator or separator (type, configuration, backflush capability, frequency).
2-stage demister: FRP chevron and polypropylene mesh pad

Attach particulate size efficiency curve.
N/A

Inlet flow & out let flow are same?

Operating Parameters

Inlet volume of gases handled 34,226 (ACFM) @ 135 °F	Outlet volume of gases handled 34,226 (ACFM) @ 135 °F 17.3 % Moisture

Liquid flow rates. Describe equipment provided to measure liquid flow rates to scrubber (e.g., quenching section, recirculating solution, makeup water, bleed flow, etc.)

2.2 gpm, liquid discharge from packed tower. Flow meters will be provided to measure the recirculation and blowdown rates.

Describe scrubber liquid supply system (amount of make-up and recirculating liquid, capacity of recirculating liquid system, etc).

Liquid recirculation rate = 480 gpm. 20% NaOH reagent usage = 0.7 gpm. Blowdown = 2.2 gpm. 12 gpm evaporation rate in quench chamber.

State pressure drop range (in water) across scrubber (e.g., venturi throat, packed bed, etc.) only. Describe the equipment provide to measure the pressure drop. Do not include duct or de-mister losses.

4 in. w.c.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements. Los of scrubbing liquor, high and low pH, and high pressure drop will be alarmed. See Attachment 2.

Emissions Data -- *See Attachment 3*

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

6. Electrostatic Precipitator – NOT APPLICABLE

Equipment specifications

Manufacturer	Model No.	☐ Wet ☐ Dry ☐ Single-Stage ☐ Two-Stage

Gas distribution grids ☐ YES ☐ NO

Design inlet volume (SCFM) _____
Maximum operating temperature (°F) _____

Total collecting surface area _____ sq. ft. Collector plates size length _____ ft. x width _____ ft.
Number of fields _____ Number of collector plates/field _____. Spacing between collector plates _____inches.
Maximum gas velocity _____ ft/sec. Minimum gas treatment time: _____ sec.

Total discharge electrode length _____ ft.
Number of discharge electrodes _____ Number collecting electrode rappers _____

Rapper control ☐ Magnetic ☐ Pneumatic ☐ Other _____
Describe in detail

Operating parameters

Inlet gas temperature (°F) _____
Outlet gas temperature (°F) _____

State pressure drop range (water gauge) across collector only. Describe the equipment.

Volume of gas handled (ACFM) _____

Dust resistivity (ohm-cm). Will resistivity vary?

Power requirements

Number and size of Transformer Rectifier sets by electrical field

Field No.	No. of Sets	Each Transformer KVA	Each Rectifier	
			KV Ave./Peak	MaDC

Current density	Corona power	Corona power density
_____ Micro amperes/ft^2	_____ Watts/1000 ACFM	_____ Watts/ft^2

Will a flue gas conditioning system be employed? If yes, describe it.

Does air cleaning device employ hopper heaters, hopper vibrators, or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

7. Absorption Equipment: Carbon Adsorber

Equipment specifications

Manufacturer	Type	Model No
Ducon (or equal)	Double Carbon Adsorber Vessel (or equal)	CASB, Size 144

Design inlet volume (SCFM)	Tower height (ft) and inside diameter (ft)
34,226 acfm @ 135 °F	12-foot diameter; 22-foot high
Packing type and size (if applicable) Pre-filter bed; 1-foot of non-activated carbon 4 carbon beds: 3 feet of activated carbon	Height of packing (ft) (if applicable) Pre-filter (Sacrificial bed): 170 ft^2 surface area 4 adsorbing beds: 452 ft^2 surface area
Number of trays (if applicable) N/A	Number of bubble caps (if applicable) N/A

Configuration: ☒ Counter-current ☐ Cross flow ☐ Cocurrent flow

Describe pH and/or other monitoring and controls
N/A

Absorbent information

Absorbent type and concentration	Sorbent injection rate	Retention time (sec)
Activated Carbon, RBHG3	See Attachment 2	

Attach equilibrium data for absorption (If applicable).

Attach any additional information regarding auxiliary equipment, reagent (slurry mix) supply system (once through or recirculating, system capacity, etc) to thoroughly evaluate the control equipment. Indicate the flow rates for makeup, bleed, and recirculation.

Operating parameters

Volume of gas handled (ACFM)	Inlet temperature (°F)	Pressure drop (in of water) and liquid flow rate. Describe the equipment.
34,226	135	10 inches w.g.

State operating range for pH and/or absorbent concentration in scrubber liquid. N/A

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions data -- *See Attachment 3*

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) N/A

9. Other Control Equipment: _____

Equipment specifications

Manufacturer	Type	Model No

Design inlet volume (SCFM)	Capacity

Describe pH monitoring and pH adjustment, if any.

Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any.

Attach efficiency curve and/ or other efficiency information.

Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Operating parameters

Volume of gas handled

_____ @ _____ °F _____ % Moisture

Describe, in detail, important parameters and method of operation.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

10. Costs

Indicate cost associated with air cleaning device and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Operating Cost
Baghouse, SCR, packed tower, and carbon adsorber	$2.235 million	$1 million	$3.235 million	Approx $500,000/yr

11 MISCELLANEOUS

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Dust from the baghouse will be containerized and disposed off site at a licensed facility.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

See Ducon proposal in Attachment 2.

Attach the maintenance schedule for the control equipment and any part of the process equipment that, if in disrepair, would increase air contaminant emissions.

To be provided

Section D - Additional Information

Will the construction, modification, etc. of the sources covered by this application increase emissions from other sources at the facility? If so, describe and quantify.
No.

If this project is subject to any one of the following, attach a demonstration to show compliance with applicable standards

a. Prevention of Significant Deterioration permit (PSD), 40 CFR Part 52? ☐ YES ☒ NO

b. New Source Review, 25 Pa. Code Chapter 127, Subchapter E? ☐ YES ☒ NO

c. New Source Performance Standards, 40 CFR Part 60? ☐ YES ☒ NO
(If Yes, which subpart) _____

d. National Emissions Standards for Hazardous Air Pollutants (NESHAPS), 40 CFR Part 61? ☐ YES ☒ NO
If Yes, which subpart) _____

e. Maximum Achievable Control Technology (MACT), 40 CFR Part 63? ☐ YES ☒ NO
(If Yes, which subpart) _____

Attach a demonstration showing that the emissions from any new source will be the minimum attainable through the use of best available technology (BAT).

See Attachment 4

Provide emission increases and decreases in allowable (or potential) and actual emissions within the last 5 years for applicable PSD pollutant(s) if the facility is an existing major facility (for PSD purposes)

N/A. Facility is a minor source under the Clean Air Act.

Section D - Additional Information (Continued)

Indicate emission increases and decreases in tons per year (tpy), for volatile organic compounds (VOCs) and nitrogen oxides (NOx) for NSR applicability since January 1, 1991 or other applicable dates (See other applicable date in instructions). The emissions increases include all emissions including stack, fugitive, material transfer, other emission generating activities, quantifiable emissions from the exempted source(s), etc.

Permit number (if applicable)	Date issued	Indicate *Yes* or *No* if emission increases and decreases were used previously for netting	Source I.D. or Name	VOCs		NOx	
				Emission increases in potential to emit (tpy)	Creditable emission decreases in actual emissions (tpy)	Emission increases in potential to emit (tpy)	Creditable emission decreases in actual emissions (tpy)
N/A							

If the source is subject to 25 Pa. Code Chapter 127, Subchapter E, New Source Review requirements,

a. Identify Emission Reduction Credits (ERCs) for emission offsets or demonstrate ability to obtain suitable ERCs for emission offsets.

b. Provide a demonstration that the lowest achievable emission rate (LAER) control techniques will be implemented (if applicable).

c. Provide an analysis of alternate sites, sizes, production processes and environmental control techniques demonstrating that the benefits of the proposed source outweigh the environmental and social costs (if applicable).

N/A

Attach calculations and any additional information necessary to thoroughly evaluate compliance with all the applicable requirements of 25 Pa. Code Article III and applicable requirements of the Clean Air Act and regulations adopted there under. The Department may request additional information to evaluate the application such as a stand by plan, a plan for air pollution emergencies, air quality modeling, etc.

See Attachment 3

Section E - Compliance Demonstration

Note: Complete this section if the facility is not a Title V facility. Title V facilities must complete Addendum A.

Method of Compliance Type: Check all that apply and complete all appropriate sections below.

☒ Monitoring ☒ Testing ☒ Reporting
☒ Recordkeeping ☒ Work Practice Standard

Monitoring:

a. Monitoring device type (stack test, CEM etc.): **Continuous parametric monitoring and manual logging**

b. Monitoring device location: **Various (see Item c below)**

c. Describe all parameters being monitored along with the frequency and duration of monitoring each parameter: **Amount of MSW and sludge delivered daily; pressure drop across cyclone, SCR, baghouse, scrubber, carbon bed pre-filter, and carbon beds; scrubber pH and recirculation rate; SCR inlet gas temperature and ammonia injection rate.**

Testing:

a. Reference Test Method Citation: EPA reference test methods will be used to measure the emission rates. These methods will be approved by the Department in the test protocol before the testing is performed.

b. Reference Test Method Description: **As required by the Department.**

Recordkeeping:

Describe the parameters that will be recorded and the recording frequency:

Amount of MSW and sludge delivered daily; pressure drop across cyclone, SCR, baghouse, scrubber, carbon bed pre-filter, and carbon beds; scrubber pH and recirculation rate; SCR inlet gas temperature and ammonia injection rate.

Reporting:

a. Describe the type of information to be reported and the reporting frequency:

Annual emissions will be reported by March 1 each year for the preceding calendar year.

b. Reporting start date: **March 1 of the year following startup.**

Work Practice Standard: Describe each

DTE will operate the facility in accordance with manufacturer's recommendations and good air pollution control practices.

Section F - Flue and Air Contaminant Emission

1. Estimated Maximum Emissions* - *See Attachment 3*

Pollutant	Maximum emission rate			Calculation/ Estimation Method
	specify units	lbs/hr	tons/yr.	
PM				
PM_{10}				
SO_x				
CO				
NO_x				
VOC				
Others: (e.g., HAPs)	-----	-----	-----	-----

* These emissions must be calculated based on the requested operating schedule and/or process rate e.g., operating schedule for maximum limits or restricted hours of operation and /or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack and Exhauster

Stack Designation/Number 1

List Source(s) or source ID exhausted to this stack:
Energy production facility

% of flow exhausted to stack: 100

Stack height above grade (ft.) 57.5
Grade elevation (ft.)

Stack diameter (ft) or Outlet duct area (sq. ft.)
Diameter = 46" (11.5 SF)

Weather Cap
☐ YES ☒ NO

Distance of discharge to nearest property line (ft.). Locate on topographic map.
50

Does stack height meet Good Engineering Practice (GEP)?
No; GEP stack height is not required.

If modeling (estimating) of ambient air quality impacts is needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of Stack** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40	36	17.85	75	27	20.82

Stack Exhaust

Volume 34,500 ACFM Temperature 140 °F Moisture 17.3 %

Exhauster (attach fan curves) 25 in. of water 600 HP @ _____ RPM.

** If the datum and collection method information and codes differ from those provided on the General Information Form - Authorization Application, provide the additional required by that form on a separate sheet.

Section G - Attachments

Number and list all attachments submitted with this application below:

General Information Form

Plan Approval Application Form

Attachment 1	Project Background and Process Description
Attachment 2	Description of Emission Control Equipment
Attachment 3	Emission Calculations
Attachment 4	Regulatory Applicability Analysis
Attachment 5	Municipal Notifications and Land Use Letters - Lehigh Valley Planning Commission - City of Allentown - Proof of Delivery
Attachment 6	Air Pollution Control Act Compliance Review Form
Attachment 7	Monitoring and Recordkeeping
Attachment 8	7½-Minute Series U.S.G.S. Site Location Map
Attachment 9	Dispersion Modeling Analysis