TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Separation Technologies, LLC
13151 Wyandotte Road, Gibsonton, FL 33534

Crystal River Tank Farm Annex Facility

Facility ID No. 0170034

PROJECT

Project No. 0170034-019-AC
Application for Minor Air Construction Permit
Fly Ash Truck to Railcar Transloading Operations

COUNTY

Citrus County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Management
Southwest District Office
Temple Terrace, Florida 33637-7600

February 21, 2013

Prepared by David Zell

GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

I. Facility Description:

This is an existing fly ash storage and transfer facility.

II. Project Description:

A. Applicant:

Mr. Rudolph Wiechert, Regional Operations Manager
Separation Technologies, LLC
13151 Wyandotte Road
Gibsonton, FL 33534

B. Professional Engineer:

Mr. Brad James, P.E.
Trinity Consultants
919 Lake Baldwin Lane, Suite B
Orlando, FL 32814

C. Project Location:

This facility is located in Citrus County at 15760 Powerline Road in Crystal River, Florida.

D. Existing Facility and Project Summary:

Existing Facility Description

Fly ash from the on-site Progress Energy Crystal River Power Plant is transferred pneumatically to four (4) storage silos and one mass storage tank. Fly ash from other sources can also be loaded to these storage units from pneumatic trucks. Fly ash can also be transferred between the silos and tank for the purpose of blending. The silos and tank are all cross-vented (i.e., the airflows are interconnected) and emissions from the fly ash transfer operations are controlled by two (2) baghouse emission control devices, which are operated in parallel controlling emissions during the loading or unloading of all five storage units. A Vacuum/Pressure Reclaim System is used to pull fly ash from the mass storage tank via vacuum and transfer the ash to either of two storage silos. Emissions from this Vacuum/Pressure Reclaim System transfer process are controlled by a separate baghouse. Dry fly ash is loaded from storage silos to trucks on scales located immediately under one of the storage silos, with emissions controlled by the two storage units baghouses. Unusable fly ash is wetted in a pug mill and loaded into open top dump trucks and/or open top tractor trailer dump trucks via an ash mixer tub discharge for transport to a landfill. Water sprays are used to control emissions from the mixer. The trucks transporting the wet fly ash are tarped prior to departure from the facility.

Project Description

This project is the addition of transloading of fly ash from transport trucks to railcars to the current operations at this facility. In the transloading operations, a pneumatic tanker truck will connect to the bottom of the railcar via a 4" truck hose. The pneumatic tanker truck blower will be utilized to convey the flyash from the truck to the railcar. The railcar will be vented to a baghouse filter dust collector for control of particulate matter emissions. In accordance with the baghouse operating instructions, the dust collector will be purged back into the railcar after each truck is finished transferring. The baghouse, a portable Rail Barge Truck Model DC1400, will be located alongside the railcar during the transloading operations.

The pneumatic tanker trucks have a maximum transloading transfer rate of approximately 36 tons/hour to the railcar. Each truck's transloading time will be between 45 and 60 minutes as the transport trucks have a capacity of approximately 27.5 tons. Each railcar has a capacity of 110 tons, so it will take approximately four (4) trucks to fill a railcar. Only one truck will be transferring to the railcar at any time, and only one railcar will be loaded at a time. Separation Technologies is proposing six potential locations on-site where truck to railcar transloading operations can take place, but transloading will be limited to one location only at any specific time. The six transloading operation locations range from areas near the fly ash tank farm, to other areas further away on the main rail line or at a more distant rail siding *(see attached Site Overview aerial view showing proposed transloading locations)*.

E. Application Information:

Application Received and Complete on: 02/19/13
(EPSAP received on 02/18/13, application fee received on 02/19/13)

III. Applicable State and Federal Regulations

This project is subject to the preconstruction review requirements of Chapter 403, Florida Statutes and Chapters 62-204 through 62-297, Florida Administrative Code (F.A.C.), as indicated below.

Subject to:	Y/N	Comments
Rule 62-210.300, F.A.C. – Permits Required	Y	subject to general permitting requirements
Rule 62-212.400, F.A.C. - Prevention of Significant Deterioration	N	facility is not a PSD major source, nor is the project itself major
Rule 62-296.320(4), F.A.C. - General Particulate Emission Limiting Standards	Y	facility operations are a source of unconfined particulate matter emissions
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	N	facility is not a likely source of VOC and odors
Rule 62-296.401-418, F.A.C. - Stationary Source Emission Standards	N	there is no applicable source category
Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)	N	Citrus County is not an air quality maintenance area for ozone
Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)	N	this is a new source, therefore not subject to PM RACT rule
Rule 62-204.800, F.A.C. - Standards of Performance for New Stationary Sources (NSPS)	N	there is no applicable source category
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants (NESHAPS – 40 CFR 61)	N	there is no applicable source category
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants for Source Categories a.k.a. MACT (NESHAPS –40 CFR 63)	N	there is no applicable source category
Chapter 62-213, F.A.C. - Operation Permits for Major Sources of Air Pollution	N	facility is a synthetic non-Title V source
Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.	N	annual VE testing of the baghouse is required for EU No. 009

IV. Summary of Emissions

Allowable Emissions – Visible emissions (VE) are limited to 5% opacity from each baghouse dust collector emission control device.

Potential Emissions -

Pollutant	EU No. and brief description	Facility Potential Emissions (tpy) *(including this project)*	Project Potential Emissions (tpy_
PM	EU Nos. 001, 003-006, and 008: four fly ash storage silos, one storage tank and a vacuum/pressure reclaim system	3.1*	-
	EU No. 007 - truck loading from storage silos	14.7**	-
	EU No. 009 – fly ash truck to railcar transloading operations	1.4***	1.4
	Total	**19.2**	**1.4**
$PM_{10}/PM_{2.5}$	EU Nos. 001, 003-006 and 008: four fly ash storage silos, one storage tank and a vacuum/pressure reclaim system	1.7*	-
	EU No. 007 - truck loading from storage silos	3.9**	-
	EU No. 009 - fly ash truck to railcar transloading operations	0.77***	0.77
	Total	**6.4**	**0.77**

Notes -

*Emissions from these EU's are calculated based on the following:

(1) Total amount of fly ash received by all storage silos and the mass storage tank is 700,000 tons per year (200,000 tpy from Power Plant, 100,000 tpy from rail/truck imports and 400,000 tpy inter-silo transfers); and

(2) AP-42, June 2006 version, Table 11.12-2, controlled emissions factors for cement supplement unloading to elevated storage silo (pneumatic): 0.0089 lb of PM and 0.0049 lb of PM10 per ton of material loaded.

**Emissions from EU No. 007 are calculated based on the following:

(1) 300,000, tons per year of fly ash loaded from storage silos to trucks; and

(2) AP-42, June 2006 version, Table 11.12-2, controlled emissions factors for truck loading (truck mix): 0.098 lb of PM and 0.0263 lb of PM10 per ton of material loaded.

***Emissions from EU No. 009 (this project) are calculated based on the following:

(1) Pneumatic transfer rate of 36 TPH from transport truck to railcars; and operation for 8,760 hours/year (315,360 TPY) *(a significant over-estimate of expected actual operations)*; and

(2) AP-42, June 2006 version, Table 11.12-2, controlled emissions factors for cement supplement unloading to elevated storage silo (pneumatic): 0.0089 lb of PM and 0.0049 lb of PM10 per ton of material loaded.

Title V Applicability Note -

The following Note appeared in the 0170034-014-AO/0170034-015-AC combined permits and the 0170034-015-AC Technical Evaluation:

> **Additional Note:** PMI Ash Technologies, LLC took over the ownership of this facility from Boral Material Technologies, Inc. in February 2011. PMI Ash Technologies, LLC also operates an adjacent facility (Crystal River Aardelite Plant, Facility ID 0170022). The Crystal River Aardelite Plant is permitted to manufacture Aardelite, a lightweight aggregate material produced from fly ash, limestone and lime, and operate a pilot plant to study removal of ammonia from fly ash. The estimated potential PM emissions from the Crystal River Aardelite Plant is 8.65 tpy (*see Technical Evaluation and Preliminary Determination for Project 0170022-008-AC*). Therefore the potential combined PM emissions from both facilities (Facility ID Nos. 0170022 and 0170034) are less than the Title V permitting threshold.

Subsequent to the 05/09/11 issuance of the above permits, on 07/19/12 Operation Permit Administrative Correction 0170034-018-AO was issued transferring ownership of this facility from PMI Ash Technologies, LLC to Separation Technologies LLC. Based on this change of ownership, the above note did not seem to be applicable any longer and it was therefore not included as part of the technical evaluation or permit for this project. *(In any case, the issue of Title V applicability for these facilities is not at issue at this time given the low level of potential emissions of PM_{10} compared to the Title V major source threshold.)*

V. Conclusions

The emission limits proposed by the applicant will meet all of the requirements of Chapters 62-204 through 297, F.A.C.

The General and Specific Conditions listed in the proposed permit (attached) will assure compliance with all the applicable requirements of Chapters 62-204 through 297, F.A.C.

VI. Preliminary Determination

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Additional details of this analysis may be obtained by contacting the project engineer at the Florida Department of Environmental Protection Air Resource Management, Southwest District 13051 North Telecom Parkway, Temple Terrace, Florida 33637-7600.

Pursuant to Section 403.087, Florida Statutes and Section 62-4.070, Florida Administrative Code, the Department hereby gives notice of its intent to issue a permit to construct the aforementioned air pollution source in accordance with the draft permit and its conditions as stipulated (see attached).