

**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

PROJECTS

Draft Air Construction Permit No. 1050019-011-AC
Peel Dryer Modification and Plant Repermitting Projects

COUNTY

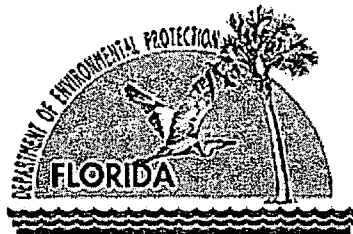
Polk County

APPLICANT

Cargill Juice North America, Inc.
Frostproof Facility
ARMS Facility ID No. 1050019

**PERMITTING
AUTHORITY**

State of Florida
Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Monitoring and Mobile Sources
Mail Station #5510
2600 Blair Stone Road
Tallahassee, Florida 32399-2400



March 3, 2006

1. GENERAL PROJECT INFORMATION

Cargill Juice North America, Inc., operates the Frostproof Plant, which consists of one citrus peel dryer; one citrus pellet cooler; three boilers (Nos. 1A, 2 and 3); and, process equipment (which includes fruit washers, oil and juice extraction equipment, cooling towers, fruit and peel conveyance equipment and peel storage) (SIC Nos. 20, 2037), located at 100 East 6th Street in Frostproof, Florida. The existing facility is subject to the following regulatory categories.

Title III: Based on the Title V permit application, the facility is a major source of hazardous air pollutants.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C.

The 2000 Florida Legislature enacted section 403.08725, Florida Statutes (F.S.), as a statutory scheme for innovative regulation of air pollutant emissions from the Florida citrus processing industry. The legislation originally specified regulatory requirements for 25 existing Florida citrus processing plants, which are unique to Florida, with Major Group Industrial Classification Codes 2033, 2037 and 2048. These plants process citrus fruit to produce single-strength or frozen concentrated juice and also dry citrus peel for animal feed. However, since enactment of the legislation, the industry has consolidated to 19 facilities that operated during the last fruit season. The Florida's Innovative Citrus Program was designed to encourage less pollution through economic incentives and investment in pollution control techniques. The Cargill Juice North America, Inc., Frostproof Plant was one of the nineteen facilities.

Rule 62-210.340, Florida Administrative Code (F.A.C.), required all facilities subject to the requirements of section 403.08725, F.S., to comply with the provisions of that statute beginning July 1, 2004. The Responsible Official for this facility certified that the facility was subject to the provisions of the statute and was capable of complying with all requirements of the statute on June 21, 2004. By doing so, the statute became facility's authority to operate for purposes of Title 40 of the Code of Federal Regulations, Part 70 (Title V) and any previous air permit held by the facility was void.

However, the statute also contained the provision that if the United States Environmental Protection Agency fails to approve this act as a revision of Florida's state implementation plan within three years after submittal, this act shall not apply with respect to construction requirements for facilities subject to regulation under the act, and the facilities subject to regulation must comply with all construction permitting requirements, including those for prevention of significant deterioration, and must make application for construction permits for any construction or modification at the facility which was not undertaken in compliance with all permitting requirements of Florida's state implementation plan, within 3 months thereafter. If the United States Environmental Protection Agency fails to approve this act as a revision of Florida's approved state Title V program within 3 years after submittal, this act shall not apply with respect to operation requirements, and all facilities subject to regulation under the act must immediately comply with all Title V program requirements and must make application for Title V operation permits within 3 months thereafter. Final approval was not received before the statutory sunset date, so the facilities previously subject to the statute are required to submit these applications for permits no later than October 15, 2005. This permitting action complies with this requirement for air construction permits. In addition to these requirements, the air construction permit will establish the facility's federally enforceable emissions limits for the Title V permit.

A Title V permit application was received by the Department on July 27, 2005. An air construction permit application for the facility; and, an application addressing an alleged past possible PSD violation involving a modification to the peel dryer was received by the Department on October 14, 2005. The alleged violation was that sometime in 1996, Cargill Juice North America, Inc. made modifications to the citrus peel dryer at its Frostproof facility without obtaining a synthetic minor permit, which would have avoided a PSD applicability determination. The air construction permit application addresses this issue. The applications were deemed complete on February 6, 2006.

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2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code.

<u>Chapter</u>	<u>Description</u>
62-4	Permitting Requirements
62-204	Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference
62-210	Required Permits, Public Notice, Reports, Circumvention, Excess Emissions, and Forms
62-212	Preconstruction Review, PSD Requirements, and BACT Determinations Rule 62-212.300. General Preconstruction Review Requirements Rule 62-212.400. Prevention of Significant Deterioration (PSD Review Only)
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Emission Limiting Standards
62-297	Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures

Federal Regulations

The Environmental Protection Agency establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 identifies New Source Performance Standards (NSPS) for a variety of industrial activities. Part 61 specifies the National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on specific pollutants. Part 63 identifies National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on the Maximum Achievable Control Technology (MACT) for given source categories. These regulations are adopted by reference in Florida Rule 62-204.800, F.A.C. The facility includes no sources subject to the New Source Performance Standards. The facility is a major source of hazardous air pollutants; therefore the National Emissions Standards for Hazardous Air Pollutants in Subpart DDDDD of 40 CFR 63 apply to the facility's boilers.

Prevention of Significant Deterioration (PSD) of Air Quality

Peel Dryer Modification Project

The Department regulates major air pollution facilities in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as defined in Rule 62-212.400, F.A.C. A PSD review is required in areas currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for a given pollutant. A facility is considered "major" with respect to PSD if it emits or has the potential to emit: 250 tons per year or more of any regulated air pollutant, or 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD Major Facility Categories (Table 62-212.400-1, F.A.C.), or 5 tons per year of lead.

For new projects at existing PSD-major sources, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the PSD Significant Emission Rates listed in Table 62-212.400-2, F.A.C. Pollutant emissions from the project exceeding these rates are considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility may be "major" with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

The existing facility is located in an area that is currently in attainment with the state and federal Ambient Air

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Quality Standards (AAQS) or otherwise designated as unclassifiable. It is an existing PSD-major facility in accordance with Rule 62-212.400, F.A.C. Therefore, the project must be reviewed for applicability of PSD preconstruction review.

Plant Repermitting Project

The Pellet Cooler, Emissions Unit I.D. -006; Boiler No. 2, Emissions Unit I.D. -005; and, Boiler No. 3, Emissions Unit I.D. -007 are considered existing emissions units and are not subject to PSD review for this permitting action. Boiler No. 1A, Emissions Unit I.D. -012, which replaces Boiler No. 1, Emissions Unit I.D. -004, was issued permit number 1050019-013-AC on November 2, 2005 and is not subject to PSD review for this permitting action. The construction of Boiler No. 1A, an existing boiler transferred from their Fort Pierce plant, is expected to begin operation in March 2006.

3. APPLICANT'S EVALUATION

Peel Dryer Modification Project

Citrus Peel Dryer Number 1, Emissions Unit I.D. -001, is a Model FDR-72C dryer with a maximum heat input of 118 million Btu per hour. The dryer was originally installed at the facility in 1960. In 1996, the facility modified the existing juice extractors to operate at higher speeds which resulted in a 10 percent increase in production capacity. During the summer of 1996, modifications were made to the burner system of the dryer to accommodate the increase in peel throughput. To address the alleged PSD violation, the applicant has requested that the maximum fruit throughput at the facility be capped at 14,360,600 boxes per year, the amount of fruit that was processed in 1994.

The emissions impacts related to the project were estimated. The following methods were used by the applicant to develop emission factors for estimating past actual emissions as well as future representative actual emissions.

- AP-42 emissions factors for sulfur dioxide and nitrogen oxides;
- Stack test data for particulate matter.
- Emission factors developed from stack test data for volatile organic compounds and carbon monoxide.

The following table summarizes the applicant's PSD applicability analysis for the project:

Pollutant	Peel Dryer Modification Project, TPY			PSD Applicability	
	Past Actual	Future Potential	Net Increase	PSD SER TPY	Subject to PSD?
CO	1,267	1,302	35.00	100	No
NOx	46.65	46.65	0.00	40	No
PM	33.53	48.38	14.85	25	No
PM10	33.53	48.38	14.85	15	No
SO2	35.9	33.12	0.00	40	No
VOC	1,056	1,085	29.00	40	No

Notes:

"TPY" means tons per year. "SER" means significant emissions rate.

Calculations based on 5,376 hours per year operation and processing 14,360,600 boxes of fruit.

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Future Potential PM Emissions were estimated at 18 pounds per hour. PM₁₀ is assumed to equal PM emissions.

The applicant predicts that the project will not result in any substantial changes emissions characteristics and will not result in any PSD-significant emissions increases.

Plant Repermitting Project

The applicant has requested that the facility be permitted at its previous capacity of 14,360,600 boxes per year of fruit processed. It requests that capacity be used rather than hours per year to limit its operation. It estimates that its actual hours of operation to process this amount of fruit would be approximately 5,376 hours. In addition, the applicant has agreed to employ best management practices to minimize emissions of carbon monoxide and has volunteered a 65 percent recovery of oil from citrus fruits processed using a three year rolling average, as pollution prevention projects.

Citrus Peel Dryer Number 1, Emissions Unit I.D. -001 has a maximum heat input of 118 million Btu per hour. The requested fuels for the dryer are natural gas and No. 2 fuel oil with a maximum sulfur content of 0.10 percent, by weight. The maximum input rate of wet peel into the dryer is 70.8 tons per hour. In the original submittal of its permit application, the emissions rate for PM/PM₁₀ was 34.2 pounds per hour. When the applicant was asked by the Department why it could not continue to comply with the 15.0 pounds per hour PM/PM₁₀ limit required under the statute or to describe any of the changes to the facility that make it impossible to comply with the 15.0 pounds per hour limit, the applicant stated that the last two annual stack test results were 13 and 14.8 pounds per hour. It claimed that 15.0 pounds per hour was too restrictive and requested 20 pounds per hour as the emissions limit. The Department again reminded the applicant that it had previously certified that it was capable of meeting the 15.0 pounds per hour PM/PM₁₀ limit; noted that the previous five stack test results were 12.0, 10.1, 4.4, 6.7 and 10.5 pounds per hour; and again requested an explanation of any changes at the facility that make it impossible to comply with 15.0 pounds per hour. The applicant summarized test results going back eleven years and showed that one test result, eleven years ago, was higher than the statute's 15.0 pounds per hour limit. Also included during this period were tests that ranged as low as 4.4 pounds per hour. The applicant provided an analysis that suggested emissions could be as high as 17.6 pounds per hour, based on a chosen confidence interval. It then requested an emissions rate for PM/PM₁₀ of 18.0 pounds per hour with a visible emissions limit of 20 percent opacity.

The Citrus Pellet Cooler, Emissions Unit I.D. -006, accepts the dried citrus peel directly from the dryer. The maximum input rate of dry peel into the pellet cooler is 25.0 tons per hour. The emissions rate requested for PM/PM₁₀ is 5.0 pounds per hour with a visible emissions limit of 5 percent opacity.

The facility employs three small boilers to provide process steam to various operations at the facility, Boiler No. 1A, Emissions Unit I.D. -012 (currently permitted under 1050019-013-AC as a replacement to Boiler No. 1, Emissions Unit I.D. -004); Boiler No. 2, Emissions Unit I.D. -005; and, Boiler No. 3, Emissions Unit I.D. -007. These boilers are subject to the "Fossil Fuel Steam Generators with Less Than 250 Million Btu per Hour Heat Input, New and Existing Emissions Units" requirements of Rule 62-296.406, F.A.C. This rule establishes opacity limits and requires the particulate matter and sulfur dioxide limits be established by a determination of Best Available Control Technology (BACT). The applicant requests, as BACT for particulate matter and sulfur dioxide, natural gas and No. 2 fuel oil with a maximum sulfur content of 0.10 percent, by weight and an opacity limit of 20 percent except 40 percent for 2 minutes per hour for Boiler No. 2 and Boiler No. 3. Boiler No. 1A has undergone BACT as part of its permitting process and is permitted for natural gas and No. 2 fuel oil with a maximum sulfur content of 0.10 percent, by weight and an opacity limit of 20 percent except 27 percent for 6 minutes per hour

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The following table summarizes the facility's emissions estimates provided by the applicant:

Emissions Unit I.D. #	Pollutant TPY					
	CO	NO _x	PM	PM ₁₀	SO ₂	VOC
-001	1,302.0	46.6	48.4	48.4	33.1	1,085.0
-006	N/A	N/A	13.4	13.4	N/A	193.9
-012*	17.8	32.4	3.2	3.2	23.0	1.2
-005	23.4	41.8	4.2	4.2	29.7	1.5
-007	14.0	25.1	2.5	2.5	17.8	0.9
Total TPY	1,357.2	145.9	71.7	71.7	103.6	1,282.5

Notes:

"TPY" means tons per year.

Calculations based on 5,376 hours per year operation and processing 14,360,600 boxes of fruit.

* From permit 1050019-013-AC.

4. DEPARTMENT'S REVIEW

Peel Dryer Modification Project

The Department has reviewed the applicant's applicability analysis and has concluded that limiting the maximum fruit throughput at the facility to 14,360,600 boxes per year provides reasonable assurance that any emissions increase will be below the significant emissions rate for that pollutant. The Department will restrict the facility by permit condition to a maximum fruit throughput of 14,360,600 boxes per year.

Plant Repermitting Project

The plant repermitting project addresses not only the modified peel dryer, but also the pellet cooler and two of the three boilers. The purpose of the permitting action for these emissions units is to establish federally enforceable emissions limits for a new Title V permit by issuance of an air construction permit, in accordance with the requirements of section 403.08725, F.S.

The Department has thoroughly reviewed all information provided by the applicant in the application and all responses to requests for additional information concerning this project. It is the Department's position that when, on June 30, 2004, the responsible official certified that the facility was subject to the provisions of section 403.08725, F.S., and could comply with all of the requirements of section 403.08725, F.S., that this facility was making a long term commitment to comply with all present and future provisions of the statute. The facility has committed to comply with all of the statutory requirements, with two exceptions. The facility claims to require a PM/PM₁₀ emissions limit of 18.0 pounds per hour for the citrus peel dryer and require a three year rolling averaging period to meet a 65 percent annual oil recovery. The responses to the Department's requests of August 29, 2005 and November 3, 2005, did not describe any changes that were made to the facility that made it impossible to comply with a PM/PM₁₀ emissions limit of 15.0 pounds per hour for the citrus peel dryer and a 65 percent annual oil recovery. The Department can only conclude that there were no changes made to the facility that would prohibit compliance with 15.0 pounds per hour PM/PM₁₀ limit for the dryer. The applicant's own data shows that with proper operation and periodic maintenance of the dryer and associated waste heat evaporator, this limit can continue to be met, as it has for the past 10 years. Therefore, the Department disagrees with the applicant's request and believes the facility capable of complying with 15.0 pounds per hour of PM/PM₁₀ for the citrus peel dryer.

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In the matter of requesting a three year averaging period for oil recovery, the Department could find no justification for this request in any of the documents submitted in support of the application. The applicant's stated concerns about fruit quality, fruit mix and weather also apply to the other processors who have agreed to a 65 percent annual oil recovery. It should also be noted that EPA has advised the Department on previous occasions that averaging times should not exceed an annual average, for reasons related to practical enforceability. The Department disagrees with the request for a three year rolling average to be applied to the annual citrus oil recovery. It should be noted that the annual oil recovery would have increased from 50 percent to 65 percent under the statute in 2007. Because oil recovery is calculated on an annual basis, the facility will not be subject to the 65 percent oil recovery until calendar year 2007. This represents no change from the averaging time under the statute that the applicant previously committed to meet.

Potential to emit for the facility will be limited by restricting the annual fruit processing capacity of the facility to 14,360,600 boxes of fruit per year; restricting the maximum heat input to the dryers; restricting the maximum heat input to the boilers; restricting the PM/PM₁₀ emissions to 15.0 pounds per hour from the citrus peel dryer and 5.0 pounds per hour from the pellet cooler; employing best management practices to minimize emissions of carbon monoxide; 65 percent recovery of oil from citrus fruits processed, and restricting the allowable fuels to natural gas or No. 2 fuel oil with a maximum sulfur content of 0.10 percent, by weight. In accordance with the requirements of Rule 62-296.406, F.A.C., the Department has reviewed the proposed opacity limit and BACT requested by the applicant. The Department has determined that BACT for particulate matter and sulfur dioxide is the firing of natural gas or No. 2 fuel oil with a maximum sulfur content of 0.10 percent sulfur, by weight. The Department has determined the allowable opacity limit to be 20 percent except 27 percent for 6 minutes per hour rather than the requested 20 percent except 40 percent for 2 minutes per hour. This opacity limit chosen by the Department is equivalent to the opacity requested by the applicant, while allowing the use of the EPA reference test Method 9 instead of DEP Method 9, which may soon be eliminated.

5. DRAFT PERMIT CONDITIONS

Based on the available information, the Department believes the peel dryer modification project is unlikely to result in PSD-significant emissions increases based on a comparison of past actual emissions to future representative actual emissions. Therefore, the Department intends to issue a draft air construction permit that includes the following requirements for the peel dryer modification project and the plant repermitting project:

- Restricting the total annual fruit processed;
- Restricting the maximum heat input to the dryers;
- Restricting the maximum heat input to the boilers;
- Restricting the PM/PM₁₀ emissions of the dryers and pellet cooler;
- Restricting the fuel type and sulfur content used at the facility;
- Applying a determination of BACT to the two small boilers;
- Employ best management practices to minimize emissions of carbon monoxide; and
- Recover 65 percent of oil from citrus fruits processed.

6. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed projects will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a

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technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Edward J. Svec is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Monitoring and Mobile Sources at Mail Station #5510, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.