STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 22, 1985

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Dear Mr. Speckhals:

Enclosed is Permit Number AC 13-79884 dated January 18, 1985, to Arnold Cellophane Corporation issued pursuant to Section 403, Florida Statutes.

Acceptance of this permit constitutes notice and agreement that the department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement actions for violation of the conditions and requirements thereof.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Enclosure

cc: T. Tittle
P. Wong
D. M. Ambrose
D. Thompson

Final Determination

Arnold Cellophane Corporation
Dade County
Miami, Florida

Permit Number:
AC 13-79884

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

January 18, 1985

Response to Public Comment

Arnold Cellophane Corporation
Miami, Florida

The application to install a catalytic incinerator with an associated vapor capture and transport system on flexographic printing press designated P-5 has been reviewed by the Department. Public notice of the Department's Intent to Issue was published in the Miami Herald on December 8, 1984. Copies of the technical evaluation and preliminary determination were available for public inspection at Dade County's Department of Environmental Resources Management office, the Department's Southeast District office, and the Department's Bureau of Air Quality Management office.

Comments were received from Mr. I. Goldman with the Department's Southeast District office. Since the comments are acceptable, they shall be added and incorporated into the proposed permit as submitted. Therefore, the following shall be added and incorporated into the proposed permit:

SPECIFIC CONDITIONS (new):

No. 10. The Department (Bureau of Air Quality Management and Southeast Florida District) shall be given 20 days prior notice of the scheduled test date in order to arrange for a pre-test meeting. Metropolitan Dade County Environmental Resources Management and Region IV United States Environmental Protection Agency shall also be notified at the same time.

No. 11. The test data shall include the temperature at the inlet, at the bed, and at the outlet of the incinerator for the tested conditions, which will be determined at the pre-test conference.

Attachment to be incorporated is:

No. 13. I. Goldman's interoffice memorandum, dated November 29, 1984.

It is recommended that the construction permit be issued as drafted, with the above Specific Conditions and Attachment incorporated.

ATTACHMENT 13

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Mr. Bruce Mitchell, BAQM - Tallahassee

FROM: Mr. I. Goldman, DER - Southeast Florida District

SUBJECT: Arnold Cellophane Corporation: Permit # AC13-079884
Printing Press P-5

DATE: November 29, 1984

Please add the following Specific Conditions to the prelimanary draft of the referenced construction permit.

° The Department (Bureau of Air Quality Management and Southeast Florida District), shall be given 20 days prior written notice of the scheduled test date in order to arrange for a pretest meeting. Metropolitan Dade County Environmental Resources Management and Region IV United States Environmental Protection Agency shall also be notified .

° The test data shall include the temperatures at the inlet, at the bed, and at the outlet of the incinerator for the tested conditions, which will be determined at the pretest conference.

IG:sw:L

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Arnold Cellophane Corporation
20400 Southwest 112th Ave.
Miami, Florida 33157

Permit Number: AC 13-79884
Expiration Date: September 1, 1985
County: Dade
Latitude/Longitude: 25° 34' 30" N/ 80° 22' 15" W
Project: Installation of a catalytic incinerator with an associated capture and transport system on a flexographic printing press designated P-5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility show on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction/installation of a catalytic incinerator with an associated capture and transport system to be retrofitted to the new flexographic printing press designated P-5 (originally P-6: see construction permit No. AC 13-55914, issued 11/2/82). The overall capture and transport efficiency and the destructive efficiency of the add-on control system was established in a LAER determination, pursuant to FAC Rule 17-2.510(4).

The construction/installation shall be in accordance with the permit application and plans, documents, amendments, and drawings, except as otherwise noted on pages 5-7 of the "Specific Conditions".

Attachments are as follows:

1. Construction permit No. AC 13-55914 and its attachments, modifications and amendments.
2. Kenneth H. Speckhals' letter, dated 12/16/83, with an Application to Construct Air Pollution Sources: DER Form 17-1.202.
3. Interoffice Memorandum, dated 1/9/84, from I. Goldman, T. Tittle and J. Guidry.
4. Victoria J. Tschinkel's letter with attachment, dated 1/16/84.
5. C.H. Fancy's letter, dated 1/17/84.
6. Kenneth H. Speckhals' letter with attachments, dated 1/30/84.
7. D.M. Ambrose's letter with attachments (includes updated application), dated 5/8/84.
8. C.H. Fancy's letter with attachment, dated 6/8/84.
9. Kenneth H. Speckhals' letter with attachments, dated 7/23/84.
10. Kenneth H. Speckhals' letter, dated 10/25/84.
11. Kenneth H. Speckhals' letter, dated 11/2/84.
12. Interoffice Memorandum, dated 11/19/84, from Bruce Mitchell.
13. I. Goldman's interoffice memorandum, dated 11/29/84.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

GENERAL CONDITIONS:

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

GENERAL CONDITIONS:

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD).
( ) Compliance with New Source Performance Standards.
(x) Determination of Lowest Achievable Emission Rate (LAER).

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The source, designated P-5, is subject to the emission standards established through a determination of LAER, which requires "70% overall capture and transport efficiency of the VOC delivered to the substrate" and "95% total destruction of the VOC delivered to the inlet of a catalytic incinerator". The add-on catalytic incinerator is a ComCat manufactured by Pillar Corporation.

2. Compliance tests shall be required to verify the LAER determined efficiencies:

° Catalytic incinerator destruction efficiency:
-The inlet and outlet VOC concentrations shall be determined by using EPA Method 25. Dividing the outlet concentration by the inlet concentration will provide the penetration. Therefore, 1 - Penetration = destruction efficiency.

° Capture and transport efficiency:
-The volatile organic matter content and the density of the inks shall be determined using EPA Method 24A or is to be provided by the vendor(s).
-A testing cycle will be 24-hours in duration and is to be representative of a typical flexographic printing press opeation
-The capture and transport efficiency is to be assessed using the following formula, which is based on measurements and/or calculations:

$$\text{capture and transport efficiency} = \frac{\text{mass of VOC delivered to the incinerator inlet/time}}{\text{mass of VOC delivered to the substrate/time}}$$

SPECIFIC CONDITIONS:

-All fugitive VOC emissions are to be accounted for: clean-up solvents, make-up solvents (solvents used to maintain ink viscosity), and solvent spillage make up the majority of the fugitive VOC emissions.
-Final test results for review and comment shall be filed with the Department (Southeast Florida District and BAQM), DERM (Dade County Environmental Resources Management), and Region IV USEPA, as soon as practical, but no later than 45 days after the last sampling run of each test is completed.

3. The source is subject to FAC Rule 17-2.620(1)(C), and some in-house preventive maintenance procedures will be required, but not limited to:

° maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
° where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
° all fittings, valves, lines, etc., shall be properly maintained;
° prevent excessive turbulence across any exposed VOC;
° all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
° maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

4. Objectionable odors shall not be allowed on off-plant property, pursuant to FAC Rule 17-2.620(2).

5. The source is subject to FAC Rule 17-2.240, which states that no person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. Therefore, an electrical interlock shall be installed such that P-5 is prevented from operating without its associated vapor control system.

6. The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and DERM. All written reports shall be filed with the same offices.

PERMITTEE:
Arnold Cellophane Corporation

Permit Number AC 13-79884
Expiration Date: September 1, 1985

SPECIFIC CONDITIONS:

7. Whenever this source is being operated with other graphic arts system units (designated P-1, P-2, P-3, and P-4), the catalytic incinerator shall be required to meet the emission standard established through the determination of LAER, which is "95% total destruction of the VOC delivered to the inlet of the catalytic incinerator". A compliance test to verify the destruction efficiency shall be required by the expiration date of this permit and prior to obtaining an operating permit.

8. Proposed operation is 24-hours per day, 5 days per week, and 50 weeks per year.

9. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER's Southeast Florida District and DERM. Full operation of the source may then be conducted in compliance with the terms of this permit until expiration of this permit or receipt of an operating permit.

10. The Department (Bureau of Air Quality Mangement and Southeast Florida District) shall be given 20 days prior notice of the scheduled test date in order to arrange for a pre-test meeting. Metropolitan Dade County Environmental Resources Management and Region IV United States Environmental Protection Agency shall also be notified at the same time.

11. The test data shall include the temperature at the inlet, at the bed, and at the outlet of the incinerator for the tested conditions, which will be determined at the pre-test conference.

Issued this 18th day of January, 19 85.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

November 21, 1984

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Dear Mr. Speckhals:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to install a catalytic incinerator with an associated capture and transport system on flexographic printing press designated P-5 at your existing facility in Dade County, Florida.

Before final action can be taken on your draft permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Dade County no later than fourteen days after receipt of this letter. The department must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permit.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa
Attachments
cc: T. Tittle
P. Wong
D. M. Ambrose
D. Thompson

State of Florida
Department of Environmental Regulation
Notice of Proposed Agency Action
on Permit Application

The Department of Environmental Regulation gives notice of its intent to issue a permit to Arnold Cellophane Corporation to install a catalytic incinerator with an associated capture and transport system on flexographic printing press designated P-5 to be located at Arnold Cellophane Corporation's existing facility at 20400 S.W. 112th Avenue, Miami, Dade County, Florida. A determination of lowest achievable emission rate (LAER) was required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitutes a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this preliminary statement. Therefore, persons who may not object to the proposed agency action may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Southeast District
3301 Gun Club Road
West Palm Beach, Florida 33402

Dade County Dept. of Environmental Resources Management
909 Southeast 1st Avenue
Brickell Plaza
Miami, Florida 33131

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an Application for Permit by	)	
Arnold Cellophane Corporation 20400 S.W. 112th Avenue Miami, Florida 33157	)	DER File No. AC 13-079884

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its Intent to Issue, and proposed order of issuance for, a permit pursuant to Chapter 403, Florida Statutes, for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Arnold Cellophane Corporation, applied on December 19, 1983, to the Department of Environmental Regulation for a permit to install a catalytic incinerator with associated capture and transport system on flexographic printing press designated P-5 in Miami, Dade County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The applicant was officially notified by the Department that an air construction permit was required for the proposed work.

This intent to issue shall be placed before the Secretary for final action unless an appropriate petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes, is filed within fourteen (14) days from receipt of this letter or

publication of the public notice (copy attached) required pursuant to Rule 17-103.150, Florida Administrative Code, whichever occurs first. The petition must comply with the requirements of Section 17-103.155 and Rule 28-5.201, Florida Administrative Code (copy attached) and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301.

Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witness and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exception to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition, may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of

Administrative Hearings, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahase, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statues.

Executed the 21 day of NOVEMBER, 1984, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Kenneth H. Speckhals, Arnold Cellophane Corporation
D. M. Ambrose, P.E., D. M. Ambrose Associates
Tom Tittle, DER Southeast District
Dan Thompson, DER Office of General Counsel
Patrick Wong, Dade County Department of Environmental Resources Management

Technical Evaluation
and
Preliminary Determination

Arnold Cellophane Corporation
Dade County
Miami, Florida

Permit Number:
AC 13-79884

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

I. Project Description

A. Applicant

Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

B. Project and Location

A construction permit, No. AC 13-55914, was issued on November 2, 1982, for the construction/installation of a new flexographic printing press and associated natural gas fired drier/heater, designated P-5 (originally P-6), pursuant to Florida Administrative Code (FAC) Rule 17-2.650(1)(f)16., Graphic Arts Systems. Because low solvent technology (LST) was unachievable with P-5, the applicant has applied for a construction permit to install a catalytic incinerator with an associated vapor capture and transport system.

The existing facility is located at the above address in Dade County, Florida, with UTM coordinates of Zone 17, 563.2 km East and 2828.6 km North.

C. Process and Controls

Flexographic printing press P-5 will use primarily polypropylene film substrates and is scheduled to operate twenty-four hours per day, five days per week. Actual operation was approximated at 6,000 hours per year.

The flexographic printing process uses a rubber image carrier located above the surface of the plate, is usually web fed, and runs on a variety of substrates. After the application of a solvent based ink to the surface of a moving web or film, the solvent is evaporated using heated air produced by the associated drier/heater. The solvent laden air is then exhausted into the atmosphere or through a control device with an associated vapor capture and transport system.

The applicant proposes to install a ComCat catalytic incinerator manufactured by Pillar Corporation. Necessary enclosures and ducting will be installed to capture the pollutant vapors emitted during the drying process. A determination of LAER (Lowest Achievable Emission Rate) will be proposed to establish the overall vapor capture and transport efficiency for the VOC delivered to the substrate and the final destruction efficiency for the catalytic incinerator of the VOC delivered to the inlet of the incinerator.

Some in-house preventive maintenance procedures will be required to maintain minimum fugitive VOC (volatile organic compounds and organic solvents) emissions from the operation of P-5:

- maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
- where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
- all fittings, valves, lines, etc., shall be properly maintained;
- prevent excessive turbulence across any exposed VOC;
- all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
- maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

II. Rule Applicability

The pollutants projected to be emitted from P-5 are VOC, particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO_2), in accordance with FAC Rule 17-2.100.

The following (Table 1) will display the annual potential pollutant emissions in tons per year (TPY) from the existing facility and based on 1983 data:

Table 1

Existing Facility	Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO_2
Graphic Arts	613.3				
Paper Coating	617.1				
Driers/Heaters	0.04	0.04	0.73	0.15	trace
TOTAL:	1230.44				

*Note:
- Driers/Heaters: Emissions (products of combustion) based on AP-42 Emission Factors Table 1.4-1.
- Driers/Heaters: VOC emissions are estimated for nonmethane.

The existing facility is major for the pollutant VOC in accordance with FAC Rule 17-2.100(98) and is located in an area designated nonattainment for the pollutant ozone in accordance with FAC Rule 17-2.410(1)(d). VOC's are precursors to ozone.

The following (Table 2) will display the annual projected potential pollutant emissions in TPY for P-5:

Table 2

P-5	Projected Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO_2
Flexographic printing press	204.2				
Drier/heater	0.004	0.004	0.073	0.015	trace

*Note:
- P-5 unit is estimated to increase natural gas usage by 10% of the facility's current usage.
- Drier/heater: Emissions (products of combustion) based on AP-42 Emission Factors, Table 1.4-1.
- Drier/heaters: VOC emissions are estimated for nonmethane.

The VOC potential emissions projected for P-5 shall be reviewed in accordance with FAC Rule 17-2.510, New Source Review for Non-attainment Areas.

Since the projected potential VOC emissions for P-5 are greater than the significant emission rates (40 TPY VOC) displayed in Table 500-2, pursuant to FAC Rule 17-2.510(2)(e)2., the source's VOC emissions shall be reviewed in accordance with FAC Rule 17-2.510(2)(d) 4.a., Modifications to Major Facilities. Therefore, P-5 shall be subject to the provisions of FAC Rule 17-2.510(4), Preconstruction Review Requirements.

Under FAC Rule 17-2.510(4)(a), P-5 is subject to a determination of LAER on the affected pollutant VOC. LAER is to be determined in accordance with FAC Rule 17-2.640. For LAER, the applicant proposed to retrofit a catalytic incinerator with a capture and transport system, having an overall capture efficiency of 70% of the VOC delivered to the substrate and a 95% total destruction of the VOC captured and transported to the

inlet of the catalytic incinerator. The Bureau proposes that LAER (see attachment) be the same as that requested by the applicant. Therefore, with the application of LAER, the following (Table 3) will exhibit the projected VOC potential emissions in TPY:

Table 3

	Projected VOC Potential Emissions (TPY)
P-5	68.4

Note: ° Based on 70% overall capture and transport efficiency of the VOC delivered to the substrate and 95% total destruction of the VOC captured and transported to the inlet of the catalytic incinerator.

In order to comply with the provisions of FAC Rule 17-2.510(4)(b), Arnold Cellophane Corporation signed a Delayed Compliance Consent Order (DCO) with the Department for the existing facility. The DCO was signed on September 10, 1984. Since a DCO is subject to USEPA Region IV approval, the proposed rule (DCO) appeared in the Federal Register, Vol. 49, No. 196, dated October 9, 1984.

Pursuant to FAC Rule 17-2.510(4)(c), there is sufficient new source allowance for Dade County, as displayed in Table 510-1, to allow the construction/installation of P-5. Therefore, VOC emission offsets shall not be required.

Because the new source allowance of VOC is available, the proposed project satisfies the provisions of FAC Rule 17-2.510(4)(d)1.a., Net Air Quality Improvement Requirement - Nonattainment Areas with Approved SIP.

Satisfying the review of the affected pollutant VOC, pursuant to FAC Rule 17-2.510(2)(d)4.a., the VOC emission standards will be permitted in accordance with the proposed LAER determination, pursuant to FAC Rule 17-2.510(4)(a).

The products of combustion of the natural gas in the associated drier/heater are less than 0.10 TPY (see Table 2) and will become a part of the waste stream captured and transported to and oxidized by the catalytic incinerator.

A compliance test will be required to ascertain the actual overall collection and destruction efficiencies of the retrofitted VOC control system pursuant to the proposed LAER determination and will be accomplished by the following:

° The destruction efficiency of the catalytic incinerator of the pollutant vapors delivered to it shall be determined by establishing and comparing the inlet and outlet concentrations using EPA Method 25, which is the test method required of sources with add-on destructive control devices that are subject to FAC Rule 17-2.650(1)(f)16.b.(1)(C) and pursuant to FAC Rule 17-2.700, Stationary Point Source Emissions Test Procedures.

° Since there is no official EPA test method for measuring capture and transport efficiency, the following methodology will be utilized:

- the determination of the volatile organic matter content and the density of the printing inks shall be in accordance with 40 CFR 60, Appendix A, Method 24A or as provided from the vendor(s).
- a 24-hour testing cycle is to be used and is to represent a typical operating cycle.
- capture and transport efficiency is to be assessed using the following formula, which is based on measurements and/or calculations:

capture and transport efficiency	=	mass of VOC delivered to the incinerator inlet/time	÷ mass of VOC delivered to the substrate/time

- all fugitive VOC emissions are to be accounted for: clean-up solvents, make-up solvents (solvents used to maintain ink viscosity), and solvent spillage make up the majority of the fugitive VOC emissions.

The source is subject to the provision of FAC Rule 17-2.620(1)(a), which states that no person shall store, pump, handle, process, load, unload or use in any process or installation volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. Therefore, some in-house preventive maintenance procedures shall be required (see Section I.C.).

The source is subject to the provisions of FAC Rule 17-2.620(2), which states that no person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. Therefore, objectionable odors shall not be allowed on off-plant property.

The source is subject to the provisions of FAC Rule 17-2.240, which states that no person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. Therefore, an electrical interlock shall be installed such that P-5 is prevented from operating without its associated vapor control system.

The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and the Dade County's Environmental Resources Management. File all written reports with the same offices.

III. Summary of Emissions and Air Quality Analysis

A. Emission Limitations

In applying the provisions of FAC Rule 17-2.510(4), the source was subject to the determination of LAER. Efficiencies were established for the vapor control system to be retrofitted, which are "70% overall capture and transport of the VOC delivered to the substrate" and "95% total destruction of the VOC delivered to the catalytic incinerator inlet".

The emission limitations are in compliance with the applicable requirements of FAC Chapter 17-2.

B. Air Quality Analysis

An air quality analysis was not required.

IV. Conclusions

With the application of LAER requiring the installation of an add-on vapor control system, the VOC emissions reduction will be greater than with the application of the source specific RACT rule. Also, with the retrofitting of the same VOC control system to the existing facility's graphic arts system units (P-1, P-2, P-3, and P-4), the facility VOC emissions will be greatly reduced. For the VOC emissions from the existing facility's graphic arts system units, the applicant must only demonstrate 90% total destruction of the VOC delivered to the incinerator inlet when operating without P-5. However, whenever P-5 is to be operated with any of the existing graphic arts system units, the LAER established destruction efficiency shall prevail.

Since there is no approved method to assess an overall capture and transport efficiency, a post compliance test(s) review and comment period will be established with the applicant,

the Dade County's Environmental Resources Management, the DER's Southeast Florida District, the DER's Bureau of Air Quality Management, and the Region IV USEPA, to ascertain if the compliance test(s) did verify the guidelines established through the determination of LAER.

The General and Specific Conditions are listed in the attached proposed permit.

ATTACHMENT

PROPOSED LAER

Lowest Achievable Emission Rate (LAER) Determination
Arnold Cellophane Corporation
Dade County

The applicant has installed a flexographic press at their facility located in Miami, Florida. The unit, designated as No. P-5, is used primarily with oriented polypropylene film substrates and is scheduled to operate a twenty-four hour day, five days a week.

The flexographic printing process uses a rubber image carrier located above the surface of the plate, is usually web fed, and runs on a variety of substrates. Basically, the process is the application of an alcohol based ink to the surface of a moving web or film, then rapid solvent evaporation using heated air. The solvent laden air is currently exhausted from the system directly into the atmosphere.

The solvent vapors are defined as volatile organic compounds (VOC's) and when discharged to the atmosphere contribute significantly to air pollution, which may reasonably be anticipated to endanger public health or welfare. VOC emissions are most significant as air pollutants in their role of photochemical oxidant precursors.

The dryer is the major source of VOC emissions with a lesser amount emitted at the ink fountain, the press, and the chill rolls. Vapor capture systems are necessary to minimize VOC vapor loss around the ink fountain and at the chill rolls. VOC emissions can also be reduced by using low solvent technology inks, if compatible with the planned line substrate.

The Arnold Cellophane plant is located in Dade County, which is classified nonattainment for the pollutant ozone, Rule 17-2.410. The additional press will result in ozone (VOC) emissions that will exceed the 40 ton per year significant emission rate by approximately 30 tons per year, Table 500-2 Regulated Air Pollutants - Significant Emission Rates.

This is a modification to a major facility, thus subject to the provisions of Rule 17-2.510(2)(d)4.a. The application and employment of Lowest Achievable Emission Rate (LAER) is a preconstruction review requirement (Rule 17-2.510(4)(a)). The procedure for determining LAER is set forth in Rule 17-2.640.

LAER Determination Requested by the Applicant:

Enclosures and ducts will be installed to capture 70 percent of the VOC vapors emitted at the press. The vapors will be conveyed to a new catalytic incinerator designed to convert 95 percent of the VOC's to innocuous CO_2 and water by rapid oxidation.

Date of Receipt of a LAER application:

October 25, 1984

Review Group Members:

This determination was based upon comments received from the New Source Review Section, the Southeast Florida District, Dade County Department of Environmental Resources Management, and USEPA-Region IV.

LAER Determined by DER:

Pollutant	Emission Limit
Ozone (VOC)	70 percent capture efficiency of the VOC vapors emitted at the press and 95 percent destruction of the collected vapors by the catalytic incinerator

LAER Determination Rationale:

In flexographic printing from stationary sources, volatile organic compounds (VOC's) can be released to the atmosphere by evaporation from the inking, cleaning, and curing operations. Hydrocarbons comprise a class of VOC's containing only carbon and hydrogen in various combinations. Most of these compounds and their by-products are considered poisonous, but most are harmful only in very high concentrations. Hydrocarbons can react with other chemicals, notably in the photochemical reaction, which results in the oxidants commonly called smog.

To control VOC emissions the applicant first considered using waterborne inks instead of organic solvent inks. They experimented with waterborne inks but concluded that, even though promising, waterborne inks are not yet well enought developed for their printing requirements. Only add-on control devices remain for consideration.

The three most popular types of add-on devices are those for thermal and catalytic incineration and carbon absorption. The applicant will use a catalytic incinerator to reduce by 95% the amount of VOC's discharged to the atmosphere when No. P-5 is operating. The add-on unit will be a ComCat catalytic incinerator manufactured by Pillar Corporation. The applicant will install the necessary enclosures and ducting at No. P-5 to capture 70 percent of the vapors generated. The VOC destruction efficiency of the catalytic incinerator will be 95%. The planned incinerator and press ducting modifications will result in 136 less tons of VOC's discharged into the atmosphere per year.

The Department, when preparing a Lowest Achievable Emission Rate (LAER) determination, shall give consideration to and make a determination that reflects: 1) any information published by the USEPA including the BACT/LAER Clearinghouse, 2) the most strigent emission limitation which is contained in the implementation plan of any State, 3) the most stringent emission limitation which is achieved in practice, and 4) all scientific, engineering, technical material, or other relevant information available to the department.

The latest (May 1984) BACT/LAER Clearinghouse summary lists data for eight facilities in the graphic arts category, half of which are rotogravure systems. Most of the efficiencies reported were based on a stack test for the control device and did not include the capture efficiency of the vapors generated at the emission point. At one of the listed facilities a material balance around the control device and vapor collection system was done. The control device efficiency was 95% and the capture efficiency was 73%. This facility did not have to meet LAER.

The literature research indicates that a 95% efficiency of a catalytic incinerator and a vapor system capture efficiency between 70-73 percent are the most stringent limits that meet the LAER requirement as set forth in Rule 17-2.510(4)(b). The department agrees that the VOC emission limit for No. P-5, as proposed by the applicant, is LAER.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

_____
C. H. Fancy, Deputy Chief, BAQM

_____
Date

Approved by:

_____
Victoria J. Tschinkel, Secretary

_____
Date

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Arnold Cellophane Corporation
20400 Southwest 112th Ave.
Miami, Florida 33157

Permit Number: AC 13-79884
Expiration Date: September 1, 1985
County: Dade
Latitude/Longitude: 25° 34' 30" N/
80° 22' 15" W
Project: Installation of a catalytic incinerator with an associated capture and transport system on a flexographic printing press designated P-5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility show on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction/installation of a catalytic incinerator with an associated capture and transport system to be retrofitted to the new flexographic printing press designated P-5 (originally P-6: see construction permit No. AC 13-55914, issued 11/2/82). The overall capture and transport efficiency and the destructive efficiency of the add-on control system was established in a LAER determination, pursuant to FAC Rule 17-2.510(4).

The construction/installation shall be in accordance with the permit application and plans, documents, amendments, and drawings, except as otherwise noted on pages 5-7 of the "Specific Conditions".

Attachments are as follows:

1. Construction permit No. AC 13-55914 and its attachments, modifications and amendments.
2. Kenneth H. Speckhals' letter, dated 12/16/83, with an Application to Construct Air Pollution Sources: DER Form 17-1.202.
3. Interoffice Memorandum, dated 1/9/84, from I. Goldman, T. Tittle and J. Guidry.
4. Victoria J. Tschinkel's letter with attachment, dated 1/16/84.
5. C.H. Fancy's letter, dated 1/17/84.
6. Kenneth H. Speckhals' letter with attachments, dated 1/30/84.
7. D.M. Ambrose's letter with attachments (includes updated application), dated 5/8/84.
8. C.H. Fancy's letter with attachment, dated 6/8/84.
9. Kenneth H. Speckhals' letter with attachments, dated 7/23/84.
10. Kenneth H. Speckhals' letter, dated 10/25/84.
11. Kenneth H. Speckhals' letter, dated 11/2/84.
12. Interoffice Memorandum, dated 11/19/84, from Bruce Mitchell.

PERMITTEE:
Arnold Cellophane Corporation

Permit Number: AC 13-79884
Expiration Date: September 1, 1985

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD).
( ) Compliance with New Source Performance Standards.
(x) Determination of Lowest Achievable Emission Rate (LAER).

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The source, designated P-5, is subject to the emission standards established through a determination of LAER, which requires "70% overall capture and transport efficiency of the VOC delivered to the substrate" and "95% total destruction of the VOC delivered to the inlet of a catalytic incinerator". The add-on catalytic incinerator is a ComCat manufactured by Pillar Corporation.

2. Compliance tests shall be required to verify the LAER determined efficiencies:

° Catalytic incinerator destruction efficiency:

-The inlet and outlet VOC concentrations shall be determined by using EPA Method 25. Dividing the outlet concentration by the inlet concentration will provide the penetration. Therefore, 1 - Penetration = destruction efficiency.

SPECIFIC CONDITIONS:

° Capture and transport efficiency:
-The volatile organic matter content and the density of the inks shall be determined using EPA Method 24A or is to be provided by the vendor(s).
-A testing cycle will be 24-hours in duration and is to be representative of a typical flexographic printing press opeation.
-The capture and transport efficiency is to be assessed using the following formula, which is based on measurements and/or calculations:

capture and transport efficiency = mass of VOC delivered to the incinerator inlet/time ÷ mass of VOC delivered to the substrate/time

-All fugitive VOC emissions are to be accounted for: clean-up solvents, make-up solvents (solvents used to maintain ink viscosity), and solvent spillage make up the majority of the fugitive VOC emissions.
-Final test results for review and comment shall be filed with the Department (Southeast Florida District and BAQM), DERM (Dade County Environmental Resources Management), and Region IV USEPA, as soon as practical, but no later than 45 days after the last sampling run of each test is completed.

3. The source is subject to FAC Rule 17-2.620(1)(C), and some in-house preventive maintenance procedures will be required, but not limited to:

° maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
° where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
° all fittings, valves, lines, etc., shall be properly maintained;
° prevent excessive turbulence across any exposed VOC;
° all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
° maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

4. Objectionable odors shall not be allowed on off-plant property, pursuant to FAC Rule 17-2.620(2).

PERMITTEE:
Arnold Cellophane Corporation

Permit Number AC 13-79884
Expiration Date: September 1, 1985

SPECIFIC CONDITIONS:

5. The source is subject to FAC Rule 17-2.240, which states that no person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. Therefore, an electrical interlock shall be installed such that P-5 is prevented from operating without its associated vapor control system.

6. The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and DERM. File all written reports with the same offices.

7. Whenever this source is being operated with other graphic arts system units (designated P-1, P-2, P-3, and P-4), the catalytic incinerator shall be required to meet the emission standard established through the determination of LAER, which is "95% total destruction of the VOC delivered to the inlet of the catalytic incinerator". A compliance test to verify the destruction efficiency shall be required by the expiration date of this permit and prior to obtaining an operating permit.

8. Proposed operation is 24-hours per day, 5 days per week, and 50 weeks per year.

9. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER's Southeast Florida District and DERM. Full operation of the source may then be conducted in compliance with the terms of this permit until expiration of this permit or receipt of an operating permit.

Issued this_____day of_____,
19 __.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

Determination of LAER

Lowest Achievable Emission Rate (LAER) Determination
Arnold Cellophane Corporation
Dade County

The applicant has installed a flexographic press at their facility located in Miami, Florida. The unit, designated as No. P-5, is used primarily with oriented polypropylene film substrates and is scheduled to operate a twenty-four hour day, five days a week.

The flexographic printing process uses a rubber image carrier located above the surface of the plate, is usually web fed, and runs on a variety of substrates. Basically, the process is the application of an alcohol based ink to the surface of a moving web or film, then rapid solvent evaporation using heated air. The solvent laden air is currently exhausted from the system directly into the atmosphere.

The solvent vapors are defined as volatile organic compounds (VOC's) and when discharged to the atmosphere contribute significantly to air pollution, which may reasonably be anticipated to endanger public health or welfare. VOC emissions are most significant as air pollutants in their role of photochemical oxidant precursors.

The dryer is the major source of VOC emissions with a lesser amount emitted at the ink fountain, the press, and the chill rolls. Vapor capture systems are necessary to minimize VOC vapor loss around the ink fountain and at the chill rolls. VOC emissions can also be reduced by using low solvent technology inks, if compatible with the planned line substrate.

The Arnold Cellophane plant is located in Dade County, which is classified nonattainment for the pollutant ozone, Rule 17-2.410. The additional press will result in ozone (VOC) emissions that will exceed the 40 ton per year significant emission rate by approximately 30 tons per year, Table 500-2 Regulated Air Pollutants - Significant Emission Rates.

This is a modification to a major facility, thus subject to the provisions of Rule 17-2.510(2)(d)4.a. The application and employment of Lowest Achievable Emission Rate (LAER) is a preconstruction review requirement (Rule 17-2.510(4)(a)). The procedure for determining LAER is set forth in Rule 17-2.640.

LAER Determination Requested by the Applicant:

Enclosures and ducts will be installed to capture 70 percent of the VOC vapors emitted at the press. The vapors will be conveyed to a new catalytic incinerator designed to convert 95 percent of the VOC's to innocuous CO_2 and water by rapid oxidation.

Date of Receipt of a LAER application:

October 25, 1984

Review Group Members:

This determination was based upon comments received from the New Source Review Section, the Southeast Florida District, Dade County Department of Environmental Resources Management, and USEPA-Region IV.

LAER Determined by DER:

Pollutant	Emission Limit
Ozone (VOC)	70 percent capture efficiency of the VOC vapors emitted at the press and 95 percent destruction of the collected vapors by the catalytic incinerator

LAER Determination Rationale:

In flexographic printing from stationary sources, volatile organic compounds (VOC's) can be released to the atmosphere by evaporation from the inking, cleaning, and curing operations. Hydrocarbons comprise a class of VOC's containing only carbon and hydrogen in various combinations. Most of these compounds and their by-products are considered poisonous, but most are harmful only in very high concentrations. Hydrocarbons can react with other chemicals, notably in the photochemical reaction, which results in the oxidants commonly called smog.

To control VOC emissions the applicant first considered using waterborne inks instead of organic solvent inks. They experimented with waterborne inks but concluded that, even though promising, waterborne inks are not yet well enought developed for their printing requirements. Only add-on control devices remain for consideration.

The three most popular types of add-on devices are those for thermal and catalytic incineration and carbon absorption. The applicant will use a catalytic incinerator to reduce by 95% the amount of VOC's discharged to the atmosphere when No. P-5 is operating. The add-on unit will be a ComCat catalytic incinerator manufactured by Pillar Corporation. The applicant will install the necessary enclosures and ducting at No. P-5 to capture 70 percent of the vapors generated. The VOC destruction efficiency of the catalytic incinerator will be 95%. The planned incinerator and press ducting modifications will result in 136 less tons of VOC's discharged into the atmosphere per year.

The Department, when preparing a Lowest Achievable Emission Rate (LAER) determination, shall give consideration to and make a determination that reflects: 1) any information published by the USEPA including the BACT/LAER Clearinghouse, 2) the most strigent emission limitation which is contained in the implementation plan of any State, 3) the most stringent emission limitation which is achieved in practice, and 4) all scientific, engineering, technical material, or other relevant information available to the department.

The latest (May 1984) BACT/LAER Clearinghouse summary lists data for eight facilities in the graphic arts category, half of which are rotogravure systems. Most of the efficiencies reported were based on a stack test for the control device and did not include the capture efficiency of the vapors generated at the emission point. At one of the listed facilities a material balance around the control device and vapor collection system was done. The control device efficiency was 95% and the capture efficiency was 73%. This facility did not have to meet LAER.

The literature research indicates that a 95% efficiency of a catalytic incinerator and a vapor system capture efficiency between 70-73 percent are the most stringent limits that meet the LAER requirement as set forth in Rule 17-2.510(4)(b). The department agrees that the VOC emission limit for No. P-5, as proposed by the applicant, is LAER.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

_____
C. H. Fancy, Deputy Chief, BAQM

_____
Date

Approved by:

_____
Victoria J. Tschinkel, Secretary

_____
Date

ATTACHMENT 1

ATTACHMENT 1

Available Upon Request.

ATTACHMENT 2

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

December 16, 1983

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
Tallahassee, Florida 32301-8241

Dear Mr. Fancy:

I am enclosing an application for modification of our construction permit, AC 13-55914, on our flexographic press, P-5. A check for the $100.00 fee was sent to the West Palm Beach office by mistake and will be forwarded to you by Mr. Tom Tittle.

We request an LAER determination be made because of new information we have received from the EPA. My calculation, based on this new information, will increase our reportable emissions to over 40 tons. We will be unable to complete construction by the December 31, 1983 deadline on the permit because of the EPA directive.

If this application or modification to the permit does not automatically extend the December 31st date, please consider this letter a request for an extension until such time that the LAER determination has been made and we have an opportunity to review and develop an implementation plan based on that determination.

Sincerely,

Kenneth H. Speckhals

KHS:mrs
Encl.

cc: Mr. Pat Wong, DERM
Mr. Tom Tittle, DER, West Palm Beach
Mr. M. Ambrose
Mr. Jay Landers

AC 13 - 74884

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT

3301 GUN CLUB ROAD
P.O. BOX 3858
WEST PALM BEACH, FLORIDA 33402

DER
DEC 19 1983
BAQM

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROY DUKE
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: *FLEXOGRAPHIC PRINTING PRESS* [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: *ARNOLD CELLOPHANE CORPORATION* COUNTY: *DADE*

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) *P-5 (formerly P-6)*

SOURCE LOCATION: Street *20400 S.W. 112 Avenue* City *Miami*

UTM: East *17:563.2KmE* North *2828.6 KmN*

Latitude ___ ° ___ ' ___ "N Longitude ___ ° ___ ' ___ "W

APPLICANT NAME AND TITLE: *Peter E. Coots, Chief Executive Officer*

APPLICANT ADDRESS: *Arnold Cellophane Corporation, 20400 S.W. 112 Ave., Miami, Fl. 33157*

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of *Arnold Cellophane Corpor*

I certify that the statements made in this application for an *air pollution source* permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: *Peter E. Coots*

Peter E. Coots, Chief Executive Officer
Name and Title (Please Type)

Date: *11/23/83* Telephone No. *305-238-5961*

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed D.M. Ambrose

D.M. Ambrose, P.E.
Name (Please Type)

D.M. Ambrose Associates, Inc.
Company Name (Please Type)

6190 No. Federal Highway, Boca Raton, Fl. 33431
Mailing Address (Please Type)

Florida Registration No. 12831 Date: _____ Telephone No. 305-997-6790

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See attached letter of explanation

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction N/A Completion of Construction _____

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Cost will be determined based on LAER determination requested in this permit

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

February 28, 1983

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 5 ; wks/yr 52 ;
if power plant, hrs/yr no ; if seasonal, describe: not seasonal

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? yes

   a. If yes, has "offset" been applied? no

   b. If yes, has "Lowest Achievable Emission Rate" been applied? no

   c. If yes, list non-attainment pollutants. ozone

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII.

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? no

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? no

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? yes

   a. If yes, for what pollutants? V.O.C.

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
FLEXOGRAPHIC PRINTING INKS	*V.O.C.*	*SEE DISCUSSION ATTACHED P-5*		*(SEE DIAGRAM)*

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
V.O.C.	*SEE DISCUSSION*				*300 LBS/HR*	*200*	*P-5*

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural gas	*.00021*	*0.00200*	*2.0 MM*

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

_____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Waste ink and dirty washup solvent recycled by distillation for reuse as washup.

All hazardous waste dispose of in EPA approved waste site by EPA licensed contractors.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(Ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devicea: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [X] No *Not to our knowledge*

Contaminant	Rate or Concentration
V.O.C.	*Add-on-Control and capture system to achieve*
	65% reduction of all V.O.C. used

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System: *Low solvent*
2. Operating Principles: *Low solvent*
3. Efficiency:* *EPA-450/3-79-024, April 1979*
4. Capital Costs: *Unknown*

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

ATTACHMENT TO PERMIT APPLICATION

SECTION II: A

We request an LAER determination be made on our construction permit #AC 13-55914 so that we may determine what course of pollution control technology will economically achieve full compliance for our 6 color flexographic press.

In our application we stated that we intended to achieve compliance using low solvent technology inks for Graphic Arts systems. The flexo press was designed and built with the best available technology with implementation of LST in mind. We were uncertain that LST would work for our specialized application since it was new techology. We were, however, strongly encouraged by inks and film manufacturers. Our direct competitors almost universally were planning to use low solvent technology on both RACT and LAER equipment.

In our first application we estimated emissions of 30.3 tons for LST. This figure was based on an historical usage of dry pounds of ink used on our other presses in a year.

The evaporative loss of V.O.C. which occurs all the time that the ink is in the recirculation system was not included in our 30.3 ton estimate because the regulation implied only the V.O.C. content "as applied" is regulated by the LST rules. The evaporative losses or "make up solvent" may be a substantial portion of the total V.O.C. emission, which could increase our reportable emission to over 40 tons.

In a reeent communication from the EPA Region IV, we were advised that make-up solvent must be included in LST equations. As of this writing, we have not been told how to do this and what means we are to use to verify compliance. The EPA communication is attached.

During the past year we have been implementing LST inks for the press. The recent ruling by the EPA has set back our implementation plan. Aside from the ruling, we have not been a ble to achieve 100% LST ink usage on P-5 for the following reasons:

continued....

continued:

1) Not all colors are available in LST formulations. This problem thereby requires us to average V.O.C. content of the inks as they are being applied. We estimated that the average V.O.C. content of the inks could be less than 40% volume on most (but not all) jobs and therefore it is feasbile to achieve compliance if V.O.C. content averaging is allowed. In order to practically use the press, we would also need to average jobs over at least a minimum of seven days or more.

2) The amount of "make-up" solvent needed for any job is not predictable since evaporative losses occur whether the press is running or not. Flexographic printing is typically a start/stop/change operation. While it is feasible to account for make-up solvent usage daily, the record keeping and tabulation costs would be extensive and unjustifiable. Weekly accounting would be more realistic and in keeping with our present accounting practices. Even if we have accurate records of V.O.C. emission, our ability to plan and control would not be improved if compliance is based solely on % volume V.O.C. content "as applied plus make-up solvent."

3) While we can make substantial reductions in emission using (3) types of LST white ink and (5) or (6) available colors, there still exists a number of low lbs./day emission jobs we would like to run on P-5, which would not be in compliance based on % volume V.O.C. calculations. No single type of ink will do all jobs. We use at least (6) different ink types and over (140) colors to print (10) different film substrates with over (450) different designs annually. We ran about (1800) jobs on (4) presses in the past (12) months. We would like to be able to run on P-5 the full spectrum of jobs because of the exceptional print quality we can achieve. If we are limited to LST jobs on P-5, this becomes an unnecessary hardship. In fact, V.O.C. emissions level does not change because we still have to run the non-compliance job on one of the other (4) RACT standard presses where we can average over more jobs.

We propose as LAER the annual V.O.C. emmission be no greater than those achievable by an add-on-control and effective capture system. In EPA publication EPA-450/3-79-014, "Guidance for Lowest Achievable Emission Rates from 18 Major Stationary Sources of Particulate, Nitrogen Oxides, Sulfur Dioxide or Volatile Organic Compounds," LEAR is proposed as a 65% V.O.C. reduction of V.O.C. emissions using an add-on-control and effective capture system, as discussed on Page 3.13-10. We propose that we can achieve an equivalent or better annual rate using low solvent inks and better recirculation and containment to reduce make up solvent or evaporative losses. The basis for control would be an average V.O.C. content of 1.07 lbs. total V.O.C. emitted per pound of inks applied, which would be verified annually via usage record keeping on a weekly calculation. Compliance would be determined by a four week moving

continued...

continued...

average. We need the moving average to allow us time to correct or compensate for unexpected variation in our control plan.

We arrvied at the 1.07 lbs. of V.O.C. emitted per pound of ink solids applied, based on 1982 ink usage where we emitted 3.07 lbs. V.O.C. per pound of ink solids applied. A 65% reduction is calculated as follows:

$$3.07 * (1 - .65) = 1.07$$

All records would be verifiable by inspection and audit of ink and solvent purchases, as well as our daily record keeping.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
P.O. Box 570370
Miami, Florida 33157

RECEIVED
NOV 2 1983
AIR MGMT. BRANCH
CONFIRMATION

REF: Compliance procedures for Arnold Cellophane

Dear Mr. Speckhals:

This is a follow-up to the guidance Mr. Douglas Cook gave you at your October 4, 1983 meeting. You questioned the appropriateness of including make-up solvent in compliance calculations for graphic art inks. He stated that make-up solvents should be included and, as you requested, has confirmed that guidance with headquarters. We are enclosing the confirmation memorandum for your use.

On a related matter, Mr. Cook has not completed the detailed example compliance calculations for your facility but we hope to have those calculations to you shortly. If you would like to discuss this matter, please contact Mr. Cook at (404) 881-7654.

Sincerely yours,

Richard L. Dubin acting for

James T. Wilburn, Chief
Air Management Branch
Air & Waste Management Division

cc: Steve Smallwood P.E. DPER w/attachments
Anthony J. Clements, P.E. DEPM w/attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

21 OCT 1983

MEMORANDUM

SUBJECT: Addition of Dilution Solvents to Printing Inks

FROM: James C. Berry, Chief
Chemical Applications Section, CPB (MD-13)

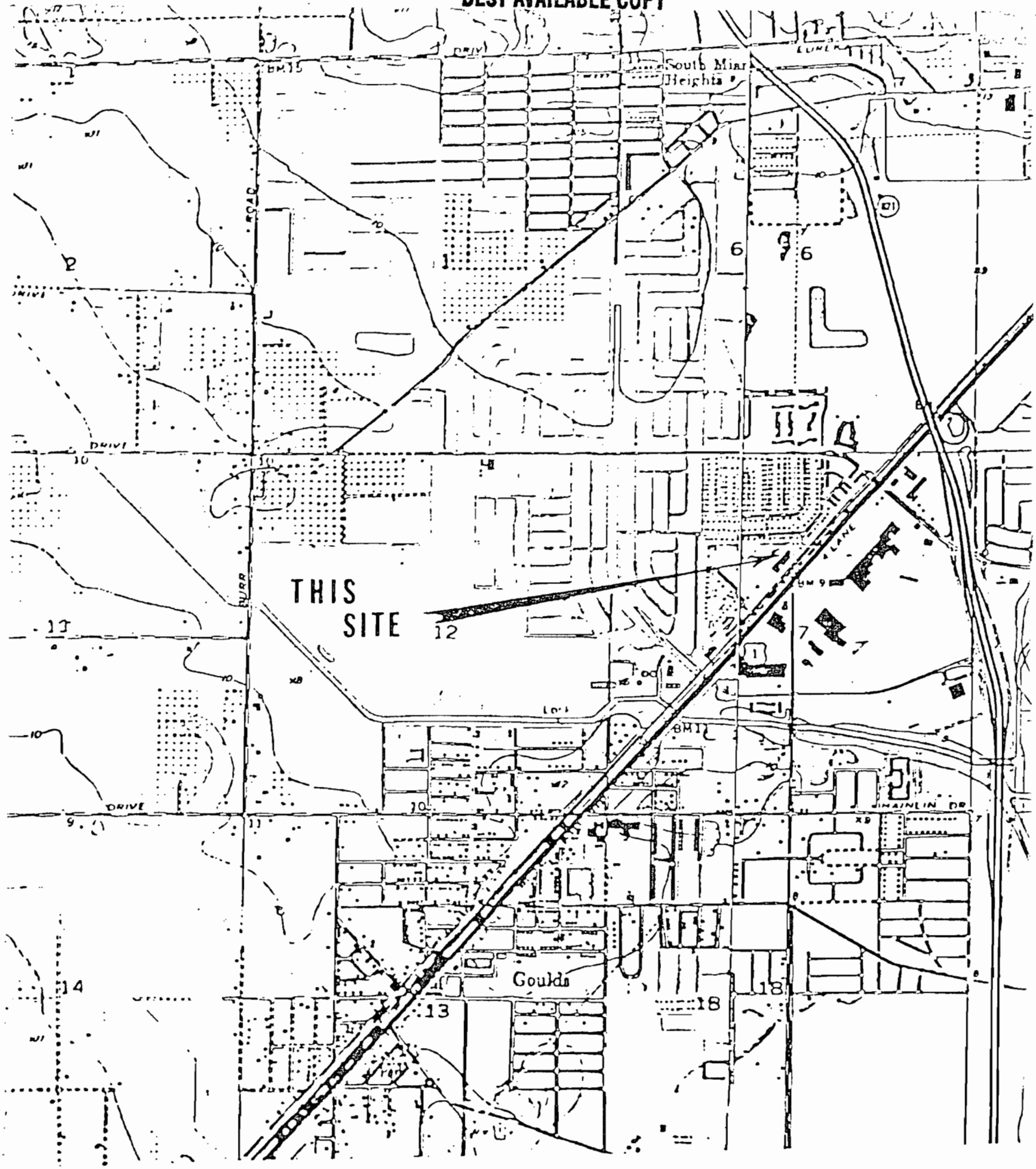
G. T. Helms, Chief
Control Programs Operations Branch, CPDD (MD-15)

TO: Doug Cook
Air Programs Branch, Region IV

This will confirm the guidance Dennis Crumpler gave to you by phone on October 13, 1983, regarding the addition of dilution solvents to printing inks. It is our position that all nonexempt solvents added to printing inks must be included in VOC reduction requirement calculations. Included are solvents added to the ink prior to its being pumped to the ink fountain and those added at the press to compensate for evaporative losses during the printing operation.

If you have additional questions please let me know. My telephone number is FTS 629-5605.

cc: Jack Farmer, ESED/OAQPS
Brock Nicholson, CPDD
Susan Wyatt, ESED



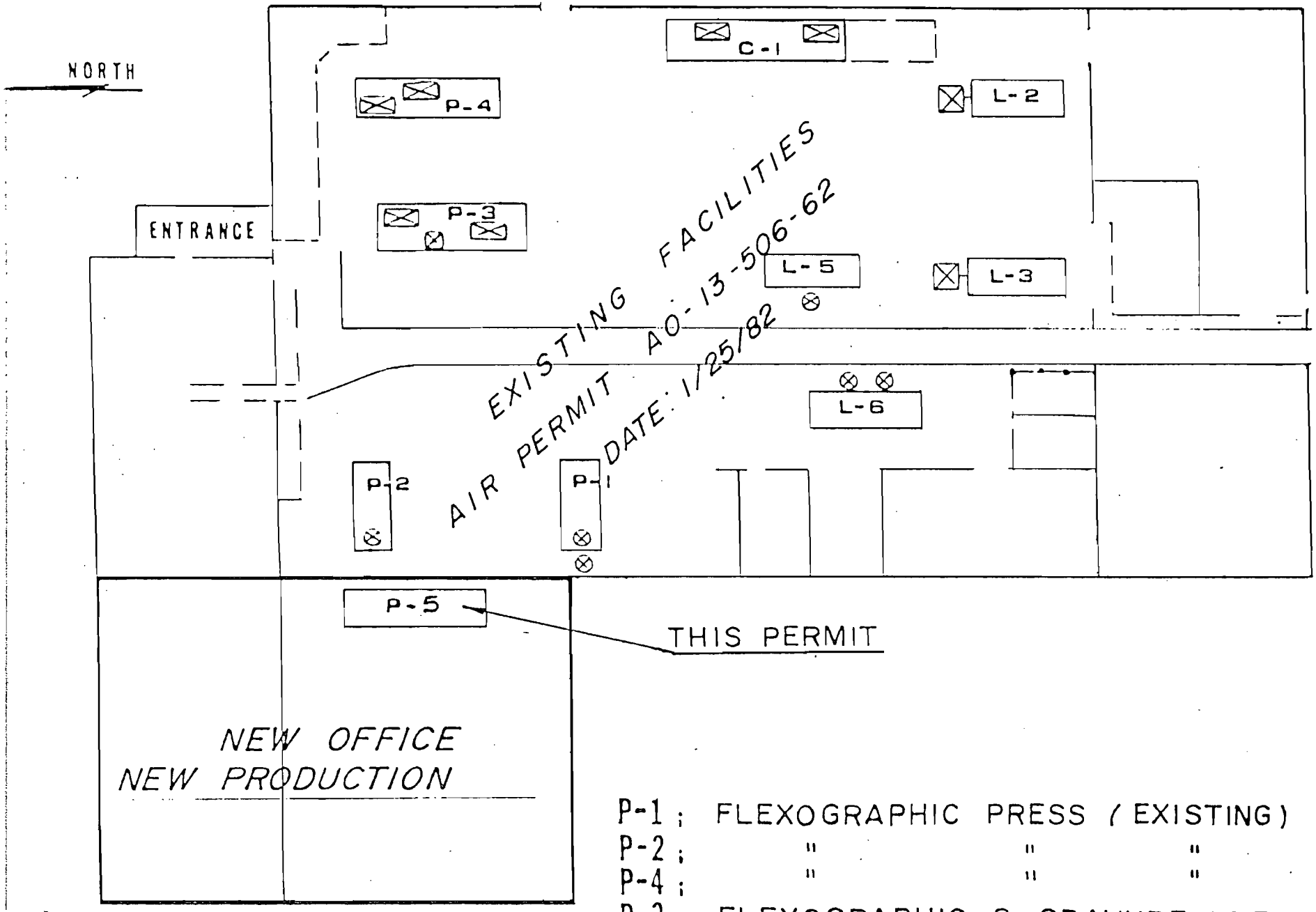
ARNOLD CELLOPHANE

DADE COUNTY FLORIDA

VICINITY MAP

DE COUNTY FLORIDA

EQUIPMENT ARRANGEMENT SKETCH



P-1 ; FLEXOGRAPHIC PRESS (EXISTING)
P-2 ; " " "
P-4 ; " " "
P-3 ; FLEXOGRAPHIC & GRAVURE PRESS (EXISTIN

2 ; TWO COATING HEAD ADHESIVE LAMINATOR, (SAME FOR L-3, L-5, L-6) "
1 ; TWO STATION PVDC COATER (EXISTING)
5 ; FLEXOGRAPHIC PRESS (NEW)

ATTACHMENT 3

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: _____ Loctn.: _____
To: _____ Loctn.: _____
To: _____ Loctn.: _____
From: _____ Date: _____

Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

DER

TO: Clair Fancy, BAQM

FROM: I. Goldman / Tom Tittle / John Guidry, SEFD

DATE: January 9, 1984

RE: Comments on Application for Modification of Construction Permit #AC-13-55914. - Flexographic Press P-5 - Arnold Cellophane Corporation

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Since the increase of Volatile Organic Compounds (VOC) emissions from this source is estimated at greater that the significant rate of 40 T/yr., (Table 500 - 2 in Chapter 17-2) Lowest Achievable Emission Rate (LAER) is applicable.

The control technologies presently available are:

a) Lower Solvents/Higher Solids
b) Incinerator
c) Absorption/Adsorption/Condensation
d) Housekeeping Procedures

The applicant would have to select from technologies a) to c) that which emitted the minimum amount of VOC. Regardless of which technology the applicant chooses, the permit should also address item d) under the general VOC Rule 17-2.620(1)(a).

EPA has indicated in letters from James Wilburn and Berry/Helms (submitted with Arnold Cellophane's request for modification of their construction permit AC-13-55914 dated December 16, 1983) that "make-up" solvent should be included in the VOC calculations showing compliance with Reasonable Available Control Technology (RACT) regulations. We feel that this was not the intent of the RACT regulation and "make-up" could be addressed under the general VOC rule cited above.

To support this view, 40 CFR 60 Subpart QQ for Publication Rotogravure, while not directly applicable to this source, does not consider make up solvents toward compliance. Why the distinction?

It is also suggested that the Best Available Technology (BACT) portion of the application form be used to describe each control technology (items a) through c)) in order to determine the LAER, and that estimates of total VOC emissions (including calculations) be shown in the application.

IG:TT:JG:lp

ATTACHMENT 4

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB

VICTORIA

January 16, 1984

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Post Office Box 570370
Miami, Florida 33157

Dear Mr. Speckhals:

The bureau is in receipt of your letter dated December 16, 1983, in which you requested an extension of the expiration date of your construction permit, No. AC 13-55914. The bureau is in agreement with the request and the following shall be added or changed:

Expiration Date:

From: December 31, 1983
To: June 30, 1984

Attachment to be incorporated:

5. Mr. Kenneth H. Speckhals' letter dated December 16, 1983.

This letter and attachment shall be attached to your construction permit, No. AC 13-55914, and shall become a part of that permit.

Sincerely,

Victoria J. Tschinkel

Victoria J. Tschinkel
Secretary

VJT/s
attachment

cc: Nancy Wright
Pat Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 5

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

December 16, 1983

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
Tallahassee, Florida 32301-8241

Dear Mr. Fancy:

I am enclosing an application for modification of our construction permit, AC 13-55914, on our flexographic press, P-5. A check for the $100.00 fee was sent to the West Palm Beach office by mistake and will be forwarded to you by Mr. Tom Tittle.

We request an LAER determination be made because of new information we have received from the EPA. My calculation, based on this new information, will increase our reportable emissions to over 40 tons. We will be unable to complete construction by the December 31, 1983 deadline on the permit because of the EPA directive.

If this application or modification to the permit does not automatically extend the December 31st date, please consider this letter a request for an extension until such time that the LAER determination has been made and we have an opportunity to review and develop an implementation plan based on that determination.

Sincerely,

Kenneth H. Speckhals

KHS:mrs
Encl.

cc: Mr. Pat Wong, DERM
Mr. Tom Tittle, DER, West Palm Beach
Mr. M. Ambrose
Mr. Jay Landers

ATTACHMENT 5

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 17, 1984

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Re: Completeness Review for the Application to Modify an Air Pollution Construction Permit: AC 13-55914

Dear Mr. Speckhals:

The bureau is in receipt of your letter and attachment dated December 16, 1983, in which you requested a modification to the above referenced construction permit. The application has been deemed incomplete and the following information, including all calculations and assumptions, shall be submitted before further processing of your request will resume:

1. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

2. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each ink (as delivered) and the amounts used (rounded to the nearest gallon), including their densities and the percent by weight of the solids, the solvent (separate if more than one), the water, and any other constituent(s).

3. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used as a make-up solvent, including the total amounts used (rounded to the nearest gallon), their densities, and the amounts recycled/reclaimed per each solvent.

4. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used for cleaning purposes only, including the amounts used (rounded to the nearest gallon) and their densities.

5. Submit, on an annual basis and for the last 5 years (1979-83), a listing of any volatile organic compounds (VOC) per type not covered in # 2, 3, and 4 above, including the amounts used (rounded to the nearest gallon), their densities, and any amounts reclaimed/recycled per each solvent.

6. Submit, on an annual basis and for the last 5 years (1979-83), the amount of hazardous waste (rounded to the nearest gallon) and the percent of VOC that has been sent to an approved hazardous waste landfill. What is your RCRA number?

7. If the flexographic press P-6 (now P-5) has used any VOC and inks to date, separate from the above requested data and list here, including the pertinent information requested.

8. If there is any proprietary information required in any response(s) to the above questions, please identify and submit as a separate document and the bureau will maintain confidentiality.

9. List the vendor(s) used for recycling/reclaiming solvents, inks, and hazardous wastes, including their addresses and phone numbers.

10. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of pressure sensitive tape and label materials?

11. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of pressure sensitive tape and label materials?

12. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of:

a) Catalogues, including mail order and premium,

b) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

c) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

d) Magazines,

e) Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

f) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

g) Periodicals, and

h) Telephone and other directories, including business reference services?

13. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of the items listed in question #12?

14. What do you propose as the add-on-control device(s) for the removal of the volatile organic compounds emitted from the flexographic press P-6 (now P-5)?

Sincerely,

E. H. Palagye

For C. H. Fancy, P.E.
Deputy Bureau Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: Nancy Wright
Patrick Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 6

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

January 30, 1984

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
2600 Blairstone Road
Tallahassee, Fl. 32301-8241

Dear Mr. Fancy:

RE: COMPLETENESS REVIEW FOR APPLICATION TO MODIFY AIR POLLUTION CONSTRUCTION PERMIT AC 13-55914

In reply to your letter of January 17th, we have been investigating the installation of a catalytic incinerator which includes not only P-5, but our other flexographic presses as well. We are abandoning any further effort to develop low solvent technology as a means of compliance for flexographic printing.

At the present, we have committed to purchase a Pillar incinerator system that will meet all state and federal regulations for add-on-controls. A copy of the brochure is enclosed. This system represents a technological breakthrough because of its low purchase/installation cost. In addition to reducing V.O.C. emissions, we plan to recover heat, thereby reducing natural gas consumption.

We plan to submit a new application for construction as soon as the engineering study is complete. The details should be available by February 17th. The application would include all of our presses, not only P-5.

We are not planning to install incineration on our laminators at this time because we believe we achieve a more economical compliance by using low solvent materials.

Sincerely,

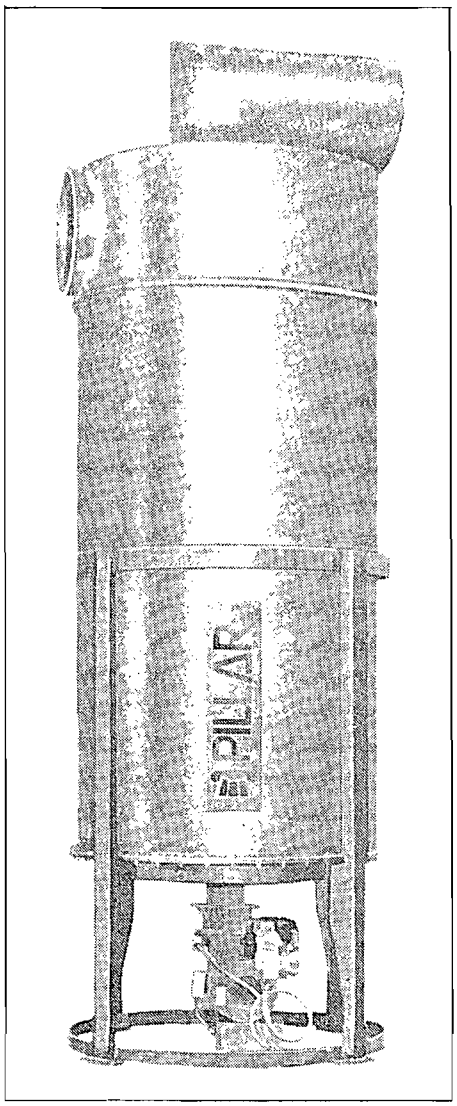
Kenneth H. Speckhals

Kenneth H. Speckhals
Technical Manager

KHS:mrs
Encl.

cc: J. Landers; Nancy Wright (DER); Patrick Wong (DERM); Tom Tittle (DER); D.M. Ambrose

PILLAR



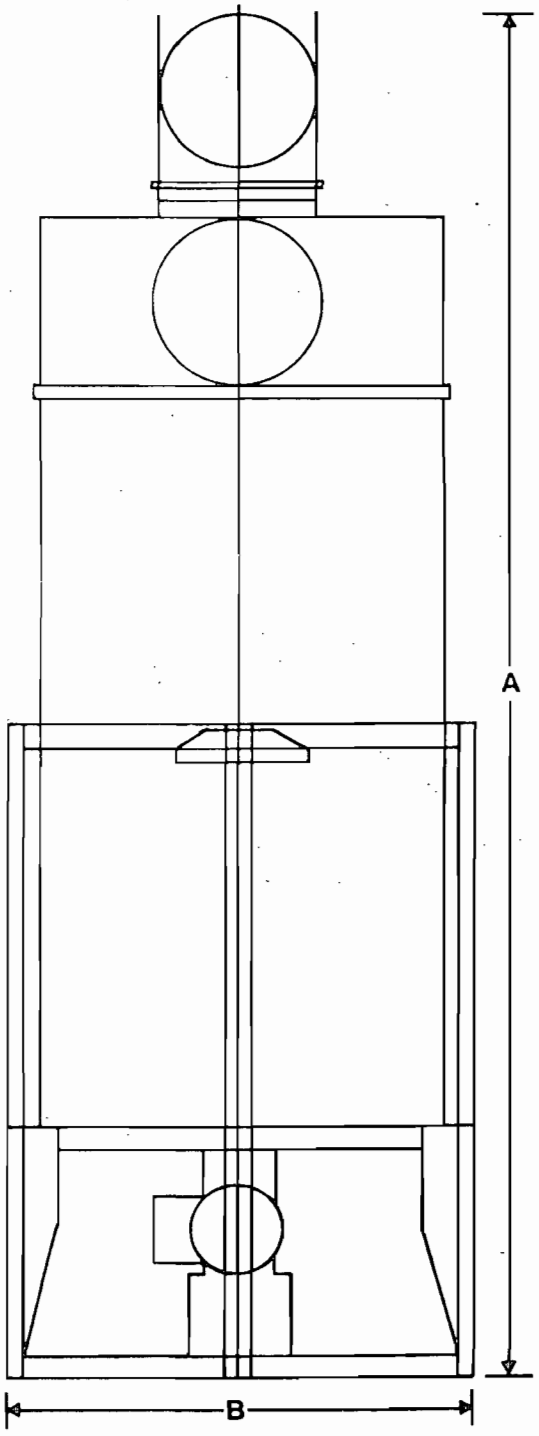
ComCat™
Catalytic Incinerator

ELIMINATE SOLVENT EMISSIONS AND SAVE ENERGY COSTS WITH THE PILLAR CATALYTIC INCINERATOR

Pillar Corporation introduces a new catalytic incinerator using a patented homogeneous catalyst at a fraction of the cost of noble metal catalysts or thermal oxidizers. Exothermic heat generated in the reactor can be returned to the plant for a rapid return on investment in energy savings.

The proprietary catalyst material is in the form of hard elongated pellets. Unlike competitive catalysts which consist of a thin coating of material on a ceramic or stainless steel base, the Pillar catalyst is 100% active material throughout. The pellets lend themselves to placement in an annular bed which greatly reduces reactor size and pressure drop.

With the Pillar catalytic reactor you can continue to do high quality printing and laminating with solvent based printing inks and adhesives and save money in the process.



MODELS AVAILABLE

SERIES	ENGLISH	METRIC
Series 45	4500 SCFM	126 m^3/min.
Series 65	6500 SCFM	186 m^3/min.
Series 100	10,000 SCFM	282 m^3/min.
Series 150	15,000 SCFM	426 m^3/min.
Series 200	20,000 SCFM	564 m^3/min.

SPECIFICATIONS

SERIES	Dimension A English/Metric		Dimension B English/Metric	
Series 45	132"	3353 mm	48"	1219 mm
Series 65	132"	3353 mm	60"	1524 mm
Series 100	132"	3353 mm	72"	1829 mm
Series 150	132"	3353 mm	84"	2134 mm
Series 200	132"	3353 mm	96"	2438 mm

ComCat™
Catalytic Incinerator

TECHNICAL FEATURES

* Catalyst Type — Homogeneous Metal Oxide
Catalyst Reaction Temperature — 400°F (204°C)
Solvent Range — 20 to 400 lbs./hr. (9.1 to 181 kgs./hr.)
Construction — ¼" (6.4 mm) Steel Plate
Inlet Temperature Range — Ambient to 400°F (204°C)
Outlet Temperature Range — 500°F to 800°F (260°C to 427°C)
External Surface Temperature — 160°F (71°C)
Heat Exchanger — Built-in Preheat Exchanger
Efficiency — 98% conversion (typical)
Life Expectancy — Five Years
Mounting — Free Standing, Indoor or Outdoor

* patented

Due to continued development, all designs and specifications are subject to change without notice.

Pillar has built an international sales/service network to speed response time. Regionally throughout North America. In principal cities around the world.

PILLAR POWER:
Responsive people building reliable systems.

PILLAR CORPORATION
Advanced Products Division
7000 West Walker Street
Milwaukee, Wisconsin 53214 USA
Phone: 414-475-7722

PILLAR ASIA LIMITED
Hong Kong

PILLAR (ORIENT) CORPORATION
Tokyo, Japan

PILLAR MEXICANA S.A. de C.V.
Mexico City, Mexico

PILLAR do BRASIL
Sao Paulo, Brasil

PILLAR EUROPE
High Wycombe, England

ATTACHMENT 7

d. m. ambrose associates, inc.
consulting engineers – land surveyors

May 8, 1984

Mr. Clair Fancy
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL. 32301-8241

Re: ARNOLD CELLOPHANE CORPORATION

Dear Mr. Fancy:

Please find enclosed copies of completed application forms and a check in the amount of $100.00 for the application fee.

If you have any further question, please contact this office.

Very truly yours,
D.M. AMBROSE ASSOCIATES, INC.

D.M. Ambrose, P.E.

Encl.

cc.: Mr. Tom Tittle, DER Palm Beach, without fee
Mr. Patrick Wong, DERM, without fee

DMA/n.

6190 North Federal Highway, Boca Raton, Florida 33431 (305) 997-6790
West Palm Beach 655-6151, Broward 462-2860

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA
DISTRICT
3301 GUN CLUB ROAD
P.O. BOX 3858
WEST PALM BEACH, FLORIDA 33402

DER

MAY 10 1984

BAQM

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ROY DUKE
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Flexographic Printing Presses [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: Arnold Cellophane Corporation COUNTY: Dade

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) _____

SOURCE LOCATION: Street 20400 S.W. 112th Avenue City Miami

UTM: East 17:563.2 KME North 2828.6 KM N.

Latitude ____° ____' ____"N Longitude ____° ____' ____"W

APPLICANT NAME AND TITLE: Peter E. Coots, Chief Executive Officer

APPLICANT ADDRESS: Arnold CEllophane Corp, 20400 SW 112 Ave, Miami, Florida 33157

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Arnold lEllophane Cor

I certify that the statements made in this application for a air pollution source permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: _____

Peter E. Coots, Chief Exec. Officer
Name and Title (Please Type)

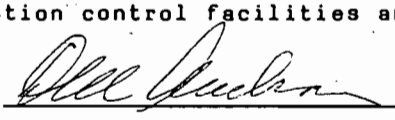
Date: 4/26/84 Telephone No. 305-238-5961

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed 

D.M. Ambrose, PE
Name (Please Type)

D.M. Ambrose Associates
Company Name (Please Type)

6190 N. Federal Highway
Boca Raton, Florida 33431
Mailing Address (Please Type)

Florida Registration No. 12831 Date: _____ Telephone No. (305) 997-6790

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See attached description and specification from Pillar Corp. and subcontractor to Pillar - Anquil Energy Systems for details and specifications.

Control system will reduce VOC emissions delivered to it by 95% or more but will not reduce total emissions of all presses by 90%.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction June 29, 1984 Completion of Construction July 31, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Total pollution control and air handling system with heat recovery to be installed by vendor at $155,000.00. Auxiliary equipment to interconnect electrical and mechanical to presses at $5,000. Total-$160,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AO 13-50662, December 31, 1982, for presses 1,2,3,4

AC 13-55914, June 30, 1984, for press 5, construction permit

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 5 ; wks/yr 52 ;
if power plant, hrs/yr N/A ; if seasonal, describe: Not seasonal.

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. Ozone

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Yes

   a. If yes, for what pollutants? VOC

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

The add-on control system planned for these four presses will reduce VOC to carbon dioxide with a better than 90% conversion rate as measured by EPA method 25 of all VOC delivered. This meets or exceeds requirements for BACT and RACT published by EPA for the operation of an add-on control.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization	Relate to Flow Diagram
	Type	% Wt	~~Rate~~ - lbs/hr	
Flexographic Ink	VOC	53.9	176.3	See attached
Solvent	VOC	100.00	157.3	Press lay-out

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
VOC	187 *	280.5	N/A	93.5	561,000	280.5	Attached
* estimate at two times allowable for any one hour in a 24 hour period.							
Note the VOC emissions are constantly changing due to whether presses are running; being changed over to the next job; or down for mechanical reasons.							

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant Estimated Capture	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Pillar Corporation "Camcat" 20,000 SCFM	70% or more	90% or more	N/A	Vendor specification

E. Fuels

Type (Be Specific)	Consumption* avg/hr	Consumption* max./hr	Maximum Heat Input (MMBTU/hr)
Natural Gas (system)	Net 0	Net 0	Net 0
	system is designed to recover heat by catalytic		
	conversion of VOC emissions. We expect to reduce		
	natural gas consumption on all presses by 80% including natural gas used to operate control device.		

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: .11 lbs per MMCF Percent Ash: 0

Density: 0°C/1 atm = .00671 lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: 1025 BTU/lb 140.4 Btus/gal BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

This system will not generate any liquid or solid waste.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: N/A ft. Stack Diameter: N/A ft.

Gas Flow Rate: N/A ACFM _____ DSCFM Gas Exit Temperature: 300-400 °F.

Water Vapor Content: variable % Velocity: variable FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____ ( ) SO^2* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ARNOLD CELLOPHANE CORPORATION

ATTACHMENT FOR SECTION II,A.

In summary, this modification is for add-on-control system for flexographic presses P1, P3, P4, and P5. Pillar Corporation and their subcontractor, Anquil Energy Systems have provided the attached a description of the equipment and schematics.

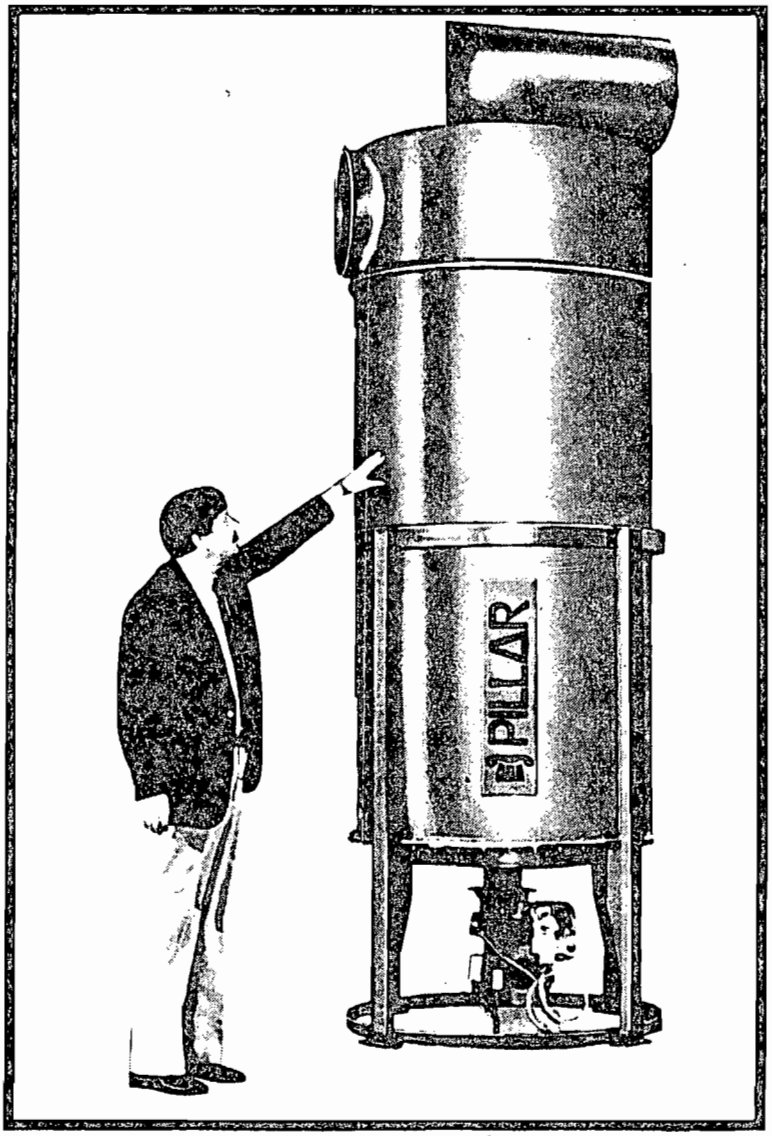
This system will reduce VOC emissions delivered to it by greater than 90%. It will not reduce total emissions from the presses by 90% because we are unable to capture or deliver more than 65% from presses 1,3, and 4 which are RACT standard and 70% from press 5 which is BACT standard. These estimated captures are based on EPA publications, EPA-450/2-78-033 and EPA-450/3-79-024. We do not know of any method to measure captured efficiency. In fact, we doubt that such a number could be reliably measured, calculated or estimated because of the dynamics and variability in the operation of our presses.

This system is the first add-on-control catalytic incineration unit with heat recovery for multiple flexographic presses.

The design and installation is a cooperative developmental effort between ourselves and Pillar Corporation. We plan to share operating data with our industry.

We believe that the project will satisfy the requirement of the Clean Air Amendments of 1977, and all Federal regulations for the reduction of VOC emissions using add-on-control of flexographic printing presses (Graphic Arts Systems).

PILLAR



NEW
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PILLAR CORPORATION
7000 West Walker Street
Milwaukee, Wisconsin 53214
Phone: (414) 475-7722
Telex: 201310 PLAR UR
Cable: PILLAR MILW

ELIMINATE SOLVENT EMISSIONS AND SAVE ENERGY COSTS WITH THE PILLAR CATALYTIC INCINERATOR

Pillar Corporation introduces a new catalytic incinerator using a patented homogeneous catalyst at a fraction of the cost of noble metal catalysts or thermal oxidizers. Exothermic heat generated in the reactor can be returned to the plant for a rapid return on investment in energy savings.

The proprietary catalyst material is in the form of a hard elongated pellet. Unlike competitive catalyst which consists of a thin coating of material on a ceramic or stainless steel base, the Pillar catalyst is 100% active material throughout. The pellets lend themselves to placement in an annular bed which greatly reduces reactor size and pressure drop.

With the Pillar catalytic reactor you can continue to do high quality printing and laminating with solvent based printing inks and adhesives and save money in the process.

February 7, 1984

Mr. Kenneth Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 S.W. 112th Street
Miami, FL 33157

Subject: Pillar Catalytic Converter With Heat Recovery

Dear Mr. Speckhals,

As a result of our meeting of February 1, 1984, we are pleased to submit our proposal to supply and install a Pillar Catalytic Converter to oxidize the exhaust from four of your presses and to return the energy back in the form of preheated air to the process.

PILLAR CORPORATION
7000 West Walker Street
Milwaukee, WI 53214
(414) 475-7722

Telex: 201310 PLAR UR
Cable: PILLAR MILW.

PILLAR ASIA LIMITED
Hong Kong

PILLAR (ORIENT) CORPORATION
Tokyo, Japan

PILLAR MEXICANA S.A. de C.V.
Mexico City, Mexico

PILLAR do BRASIL
Sao Paulo, Brasil

PILLAR EUROPE
High Wycombe, England

System Description

The exhaust output of presses #1, #4 and #5, and the hot stacks of press #3, have been measured to be a total of 30,484 ACFM. The Pillar Catalytic Converter is designed to handle 20,000 SCFM. Since it is estimated that 50% of the presses are on at any one time, it is seen that on the average, the Catalytic Converter will incinerate the total volume of exhaust.

The system will be designed so that each of the presses will have a dedicated high pressure blower which is interlocked with the present exhaust fan of that particular fan. The output of the high pressure blower is then supplied to the inlet of a heat exchanger.

The preheated exhaust of the heat exchanger will then enter the Pillar Catalytic Converter where a modulating burner will raise the temperature to 460°F. The fume laden exhaust subsequently passes over the catalyst bed and is oxidized.

Oxidation is the chemical process in which hydrocarbon and oxygen molecules combine at a given temperature to form harmless carbon dioxide and water vapor. The oxidation of the hydrocarbons results in the release of energy and, hence, a rise in the process flow temperature. It is estimated that a temperature rise of 100°F will be experienced across the catalyst bed.

When press #5 is on, the exhaust flow will be returned to the heat exchanger for this press and then directed back to the fresh air inlet of the press, which is situated on the roof. Hence, energy consumption for press #5 will be reduced because of the preheated air. The air temperature brought back to the press will be about

15°F below operating temperature to allow the present press burner to finally control temperature. The volume of air returned to the press will be about 80% of the exhaust to avoid overpressurizing the press and causing fumes back into the room.

The balance of the exhaust will be transferred to the other heat exchangers, and then ducted to a mixing plenum near press #3. The mixing plenum will be maintained at a temperature 150°F below the lowest temperature of press #1, #3 and #4. Ducts from the mixing plenum will be brought over to the supply blowers of the presses for the preheated air.

Balancing dampers will be supplied in all required lines. If the situation occurs that over 20,000 CFM is being exhausted from the plant, the Catalytic Converter system will automatically vent to atmosphere. When the exhaust volume is below 20,000 CFM, the vent dampers will close and all exhaust will pass through the Catalytic Converter.

Based upon the above system description, we propose to supply:

Engineering: Supply general arrangement drawings of the system and all ductwork to and from the presses.

Equipment:

1. One (1) Pillar Corporation, Model 20,000 SCFM Catalytic Converter including modulating gas burner, blending chamber, catalyst bed with inlet and outlet plenums.

2. Heat exchangers designed to preheat the effluent from the presses with the incinerator exhaust. The heat exchangers are designed for a flow of 20,000 SCFM.

3. Four high pressure blowers.

4. Ducting from press exhaust to heat exchanger and Catalytic Converter.

5. Ducting from Catalytic Converter to heat exchanger and mixing plenum and presses.

6. Blending plenum for presses #1, #3 and #4.

7. Incinerator controls, dampers for supply and exhaust with two position modulating motors at heat exchanger, face and by-pass dampers to regulate temperature back to the presses, and air flow balancing dampers.

Installation:
1. Erect Catalytic Converter heat exchangers, interconnecting plenum, and blowers on roof.
2. Erect all exhaust ductwork from presses to inlet of heat exchangers.
3. Erect all supply ductwork from outlet of heat exchangers to presses.
4. Install all balancing dampers.
5. Startup and balancing of system.

Price: FOB Milwaukee, Wisconsin - $155,000.00
Delivery: 16 weeks after receipt of order
Terms: 25% with order placement, 65% upon shipment, balance upon startup
Notes:
1. No structural analysis of the building is included in this proposal.
2. No electrical wiring, motor starters or disconnect boxes are included in this proposal.

Economic Considerations

The savings associated with the proposed system design are determined by estimating the energy savings associated with preheated air back to the process minus the cost of operating the incinerator.

The amount of energy that can be supplied back to the process is:

$$BTU/hr = (1.08)\ (SCFM)\ (\Delta t)$$

Where the SCFM is the flow and Δt is the temperature difference between the supply temperature and the average yearly ambient temperature.

If it is assumed that the supply flow back to press #5 is 10,000 SCFM at 185^{o} and the supply flow back to presses #1, #3 and #4, is 10,000 SCFM at 145^{o}, then the energy savings is:

$$BTU/hr = (1.08)\ (10,000)\ (185^{o}-70^{o}) + 1.08)\ (10,000)\ (145^{o}-70^{o})$$
$$= 1,242,000 + 810,000$$
$$= 2,052,000\ BTU/hr$$

The amount of energy that is required to operate the Catalytic Converter is:

$$BTU/hr = (1.08)\ (20,000)\ (460-408)$$
$$= 1,123,200\ BTU/hr$$

Hence, the net hourly savings is 829,000 BTU/hr. Assuming that fuel costs are $.65/therm (100,000 BTU), it is seen that there is a net savings of $5.39/hr. Assuming operating hours are 24 hours/day, 6 days/week, 50 weeks/year or 7200 hours/year, we project a yearly savings of $38,808.00.

In addition to the above savings, a rebalancing of press #5 exhaust from the present 12,629 ACFM to the design conditions of 9,230 ACFM will yield an additional savings of $2.49/hour of operation. If is is assumed that the press is on for 3600 hours, the yearly savings is an additional $8,964.

We thank you for the opportunity to submit this proposal. If you have any questions regarding the equipment or installation, please contact me.

Sincerely,

PILLAR CORPORATION

Wayne Collins
dw

Wayne M. Collins
Marketing Manager
Advanced Products

WMC/dw

ANGUIL ENERGY SYSTEMS, INC.

4530 N. OAKLAND AVENUE • MILWAUKEE, WI 53211
(414) 332-0230 • (414) 332-1105

April 19, 1984

Mr. Kenneth Spechals
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Subject: Catalytic Converter with Heat Recovery

Dear Ken,

The purpose of this memorandum is to present the basic system design for the Pillar Catalytic Converter with heat recovery and recirculation system.

The design is based upon the "Design Exhaust Flows" of the presses which are presented in Table 1. Table 2 shows the various combinations of exhaust flows that may be present. Table 2 is subdivided into three sections. The first section where the total combined flows are less than 20,000 CFM, the second section where the combined flows are between 20,000 CFM and 23,000 CFM and the third section where the combined flows are above 28,000 CFM.

Since the system is to be designed for 20,000 CFM, it is planned that the exhaust flows for all the presses be reduced by 10% so that conditions 11, 12, and 13 can be processed by the catalytic converter. The reduction in exhaust flow will result in increased LEL levels and hence energy savings. Following is a description of the system operation.

SYSTEM DESCRIPTION

The exhaust from Press #1,3, 4 and 5 are ducted to A, the air to air heat exchanger. The exhaust temperature is raised by the hot exhaust gases exiting the catalytic converter. The heat exchanger has been selected to be 60% efficient to minimize the fuel consumption of the catalytic converter and to avoid the potential of overheating of the system.

Since it is anticipated that there will be a 17^{o} rise in temperature per 1% LEL, a 10% LEL would yield a 170^{o}F rise across the catalyst bed. Hence if the exhaust streams from the presses arrive at the heat exchanger at 120^{o}F, and the exhaust from the catalytic incinerator is 620^{o}F, (450^{o} base + 170^{o} temperature rise), it is seen that the temperature difference between the two steams is;

$$\Delta t = 620 - 120 = 500^{o} F$$

TABLE 1. DESIGN EXHAUST FLOWS

PRESS NO.	DESIGN EXHAUST (CFM)	
1	OHD	727
	BCD	2,516
3 *	OHD	3,486
	BCD	5,290
4	OHD	3,486
	BCD	5,290
5	OHD	4,240
	BCD	6,675
TOTAL:		31,710

* Press No. 3 has two cold end exhausts, Z-1 and Z-2 rated at 2,499 and 1,660 CFM respectively. These exhausts will always be recirculated.

TABLE 2. EXHAUST FLOW COMBINATIONS

CONDITION	PRESSES COMBINATION	COMBINED FLOW (CFM)
1.	1	3,243
2.	3	8,776
3.	4	8,776
4.	5	10,915
5.	1 and 3	12,019
6.	1 and 4	12,019
7.	1 and 5	14,158
8.	3 and 4	17,552
9.	3 and 5	19,691
10.	4 and 5	19,691
11.	1 and 3 and 4	20,795
12.	1 and 3 and 5	22,934
13.	1 and 4 and 5	22,934
14.	3 and 4 and 5	28,467
15.	1 and 3 and 4 and 5	31,710

Hence a 60% efficient heat exchanger will yield a temperature rise of .6 x 500 = 300° F. The inlet temperature to the burner section therefore, results in a temperature of 120° + 300° F = 420° F, letting the burner trim out the temperature to 450°F.

When conditions 1, 2, ... or 13 (See Table 2) exist, the appropriate press system fan, D, is on and all of the exhaust from the OHD and BCD goes through the incinerator.

The incinerator exhaust subsequently passes through the heat exchanger and then to the inlet of the system fans, D. The outlet of the system fans, D, then enters the Pressure Compensating Plenum, E, where the pressure of the heat recovery portion of the system is controlled.

The Pressure Compensating Plenum subsequently feeds the Recirculation Plenum, F, where the cold end of Press #3 is entering, if it is on. The hot exhaust flows, at 320° F are then blended with any recirculating exhaust and are returned to the inlet of the presses' supply fans. Fresh air is mixed at the inlet of the supply fan with the outlet of F, to control the temperature entering the press.

This complets the system flow under conditions 1 - 13.

Under conditions 14 or 15, the output of Press #3 is shunted away from the heat exchanger and into the Recirculation Plenum, F, while the system exhaust fan for Press 3 is shut down. If any of the presses shut down, then the output of Press 3 is permitted to be returned to the heat exchanger.

I hope that the above description will be adequate for your needs. Please contact Wayne or me if you have any questions.

Very truly yours,

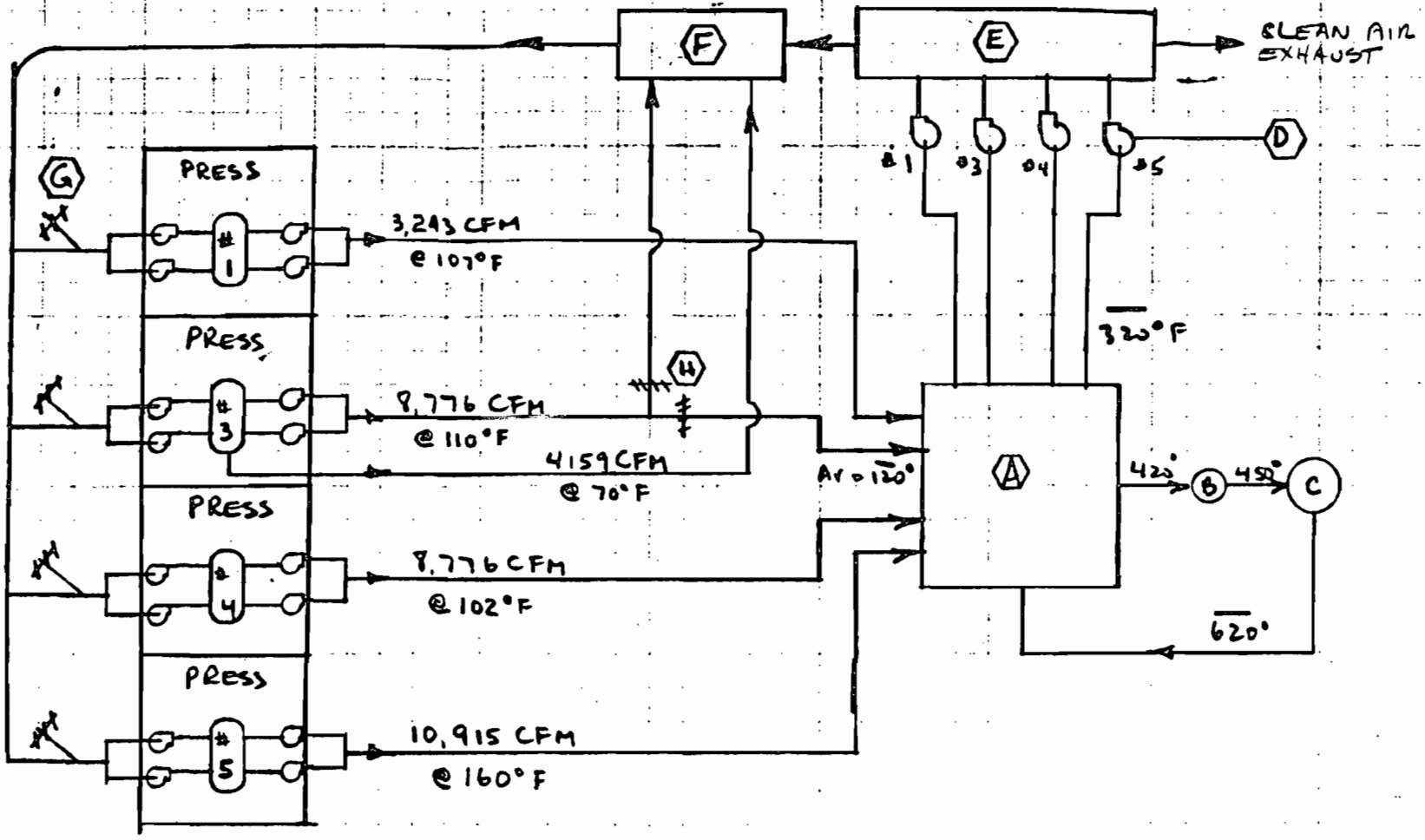
ANGUIL ENERGY SYSTEMS

Gene H. Anguil
President

/bma
cc: Wayne Collins - Pillar Corp.

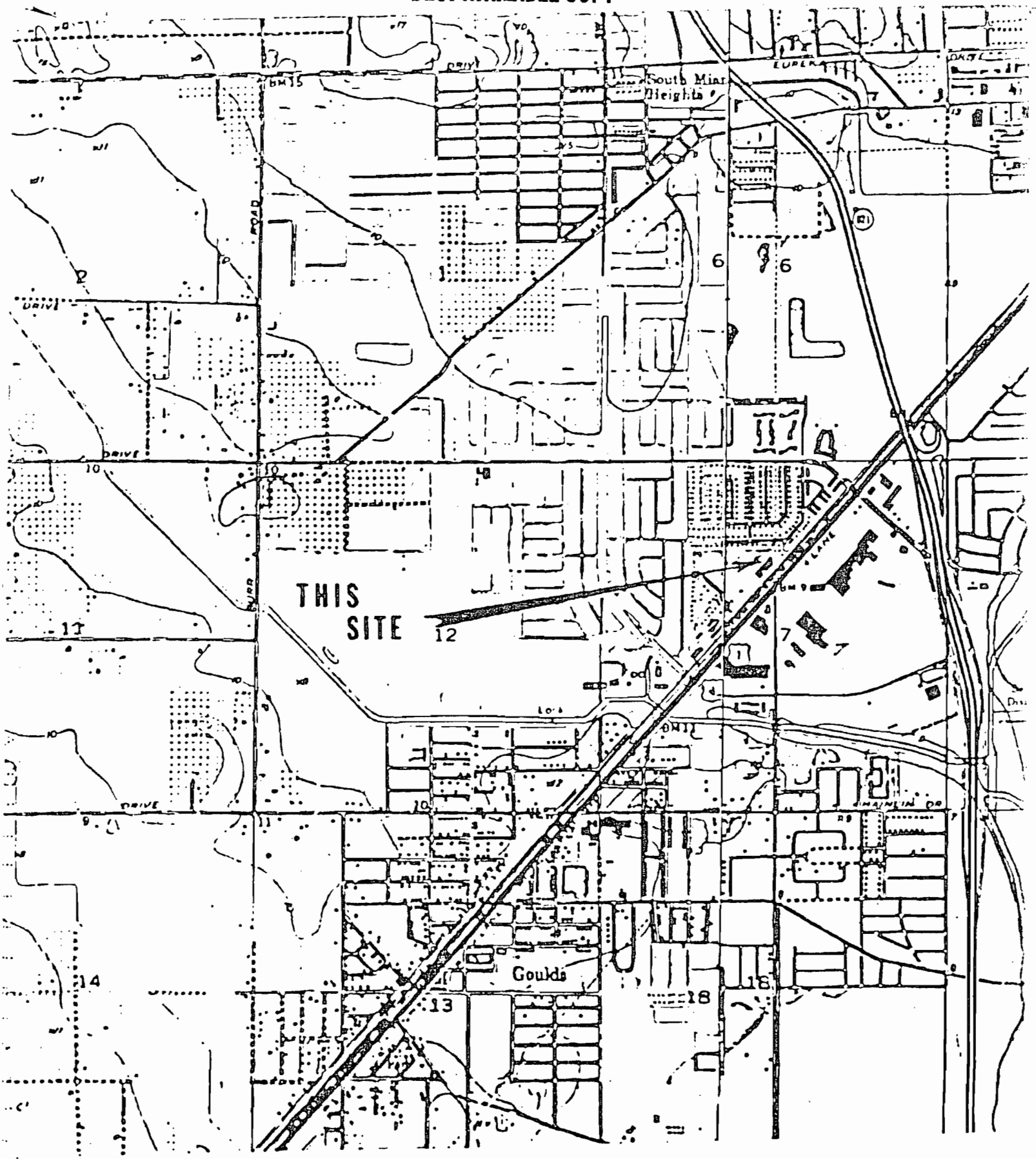
ARNOLD CELLOPHANE

SYSTEM SCHEMATIC



LEGEND :

- (A) 60% HEAT EXCHANGER
- (B) BURNER SECTION
- (C) CATALYTIC CONVERTER
- (D) 4 SYSTEM FANS
- (E) - PRESSURE COMPENSATING PLENUM
- (F) - RECIRCULATION PLENUM
- (G) TEMPERATURE CONTROL / FRESH AIR MIXING BACK TO SUPPLY FANS.
- (H) FACE & BY-PASS DAMPERS



ARNOLD CELLOPHANE

DADE COUNTY FLORIDA

State of Florida

Department of State

I certify from the records of this office that ARNOLD CELLOPHANE CORPORATION is a corporation organized under the Laws of the State of Florida.

The Charter Number for this corporation is 176675.

I further certify that said corporation has paid all fees due this office through December 31, 1981, and its status is active, as shown by the records of this office.

Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capital, this the 9th day of December, 1981

George Firestone
Secretary of State

CER 101 Rev. 12-80

ATTACHMENT 8

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

June 8, 1984

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Re: Completeness Review of the Application, AC 13-79884, to Install a Control System on Existing Flexographic Printing Presses and Involving Air Permits Nos. AC 13-55914 and AO 13-50662

Dear Mr. Speckhals:

The department has received your application to install a control system on existing flexographic printing presses, Nos. P-1, P-3, P-4, and P-5 (orginally P-6). The application has been deemed incomplete and the following information, including all assumptions and calculations, shall be submitted to the bureau before further processing will resume:

1. If there is any proprietary information required in any response(s) to the following requests, please identify and submit as a separate document and the bureau will maintain confidentiality.

2. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

3. Has flexographic printing press P-2 contained in permit AO 13-50662 been retired from service and/or been physically removed from service? If not, explain why this source was omitted from the control system strategy.

4. Since you failed to respond to the requests in the letter dated January 17, 1984, it has been attached and a response to each request is still required. Also, apply all of the requests to all of the affected sources, including P-2 if applicable.

5. Submit a methodology that will be used to assess the over-all collection efficiency from the affected sources.

6. Calculate the pollutant emissions that will enter the control device from the affected sources, including P-2 if applicable.

7. Calculate the potential pollutant emissions from the affected sources, including P-2 if applicable.

8. How often will the control system be by-passed due to excessive air flow exceeding the control system capabilities?

9. Why isn't the control system designed to handle the total volume of the affected sources?

10. Explain why you consider the violation of RACT by by-passing the control-system periodically acceptable?

11. Based on the design specifications you submitted for the control system, the proposal is unacceptable. Therefore, resubmit another control strategy that will meet RACT.

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/BM/s

cc: T. Tittle
P. Wong
N. Wright
D. M. Ambrose

attachment

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 17, 1984

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Re: Completeness Review for the Application to Modify an Air Pollution Construction Permit: AC 13-55914

Dear Mr. Speckhals:

The bureau is in receipt of your letter and attachment dated December 16, 1983, in which you requested a modification to the above referenced construction permit. The application has been deemed incomplete and the following information, including all calculations and assumptions, shall be submitted before further processing of your request will resume:

1. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

2. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each ink (as delivered) and the amounts used (rounded to the nearest gallon), including their densities and the percent by weight of the solids, the solvent (separate if more than one), the water, and any other constituent(s).

3. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used as a make-up solvent, including the total amounts used (rounded to the nearest gallon), their densities, and the amounts recycled/reclaimed per each solvent.

4. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used for cleaning purposes only, including the amounts used (rounded to the nearest gallon) and their densities.

5. Submit, on an annual basis and for the last 5 years (1979-83), a listing of any volatile organic compounds (VOC) per type not covered in # 2, 3, and 4 above, including the amounts used (rounded to the nearest gallon), their densities, and any amounts reclaimed/recycled per each solvent.

6. Submit, on an annual basis and for the last 5 years (1979-83), the amount of hazardous waste (rounded to the nearest gallon) and the percent of VOC that has been sent to an approved hazardous waste landfill. What is your RCRA number?

7. If the flexographic press P-6 (now P-5) has used any VOC and inks to date, separate from the above requested data and list here, including the pertinent information requested.

8. If there is any proprietary information required in any response(s) to the above questions, please identify and submit as a separate document and the bureau will maintain confidentiality.

9. List the vendor(s) used for recycling/reclaiming solvents, inks, and hazardous wastes, including their addresses and phone numbers.

10. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of pressure sensitive tape and label materials?

11. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of pressure sensitive tape and label materials?

12. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of:

a) Catalogues, including mail order and premium,

b) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

c) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

d) Magazines,

e) Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

f) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

g) Periodicals, and

h) Telephone and other directories, including business reference services?

13. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of the items listed in question #12?

14. What do you propose as the add-on-control device(s) for the removal of the volatile organic compounds emitted from the flexographic press P-6 (now P-5)?

Sincerely,

E. H. Palagye

For C. H. Fancy, P.E.
Deputy Bureau Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: Nancy Wright
Patrick Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 9

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

July 23, 1984

Mr. C.H. Fancy
Department of Enviromental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Dear Mr. Fancy:

Re: Completeness Review of the Application, AC 13-79884 to Install a Control System on Existing Flexographic Printing Presses and Involving Air Permits Nos. 13-55914 and AO-13-50662, Your Letters June 8, 1984 and January 17, 1984

In response to your request for additional information on the referred permit applications, the following is submitted. All proprietary information relating to material usage is attached.

(1) An approved compliance schedule for meeting the requirements of FAC 17-2.510(4)(b) has been agreed to between the DER and ourselves and as soon as the 30 day notice period is complete will be signed. A copy of this Consent Order is available through N. Wright.

(2) Flexogrpahic Printing Press P-2 was not considered in our permit application because its fate is undecided. We may use P-5 when final permit is issued to replace P-2 or we may decide to permit P-2 to run LST materials exclusively. Our decision will be based on our needs at the time and our ability to run P-2 with all compliance materials.

(3) Regarding collection efficiency methodology, Bruce Mitchell visited our facility on June 20th. We showed Mr. Mitchell our operation and discussed how we might proceed to provide the data you request. I do not believe there is an established test protocal which has been used or sponsored by the EPA, so in effect we will try to provide some meaningful data by running a 24 hour material balance on inks and solvents used on one press and one job, selected to be typical of our operation. I don't think a best case/worst case test would be an applicable test because the means of the

continued....

data would probably not be representative of our average capture efficiency.

In setting up a material balance test, I propose that we define fugitive losses as the make-up solvents we must add to maintain our inks at proper printing viscosity. Solvents added to the purchased ink are dilution solvents. If we keep these types of additions separate during a 24 hour test, we can estimate the collection or capture efficiency by dividing the total solvent emission minus the make-up solvent used, by the total solvent emission. The total solvent emission is the sum of the make-up solvents, the dilution solvents and the solvent in the ink as purchased (data supplied by the vendor).

(4) The potential emissions entering the system are estimated at 386 tons per year. Status of P-2 was discussed previously. We believe the potential emissions entering the control device will be less than 386 tons because we are continuing development on water based white ink for certain types of products that we manufacture. I am not able to forecast emissions beyond what has already been submitted in our application.

(5) The emission system will not be bypassed because of excess air flow. Air volume in excess of the incinerator will be recirculated back into the oven in a closed loop system. Only clean air will be exhausted. There are two reasons for designing the system this way; first economy of operation. We raise the solvent concentration by recirculating excess air and thereby save energy needed for combustion. Secondly the cost of equipment is substantially reduced. Since only clean air is exhausted we do not consider this system to be a violation of RACT, even when operating at full air flows; that is, with all presses and all ovens at the same time.

(6) Our presses are not used for printing or manufacturing any of the items referred to in questions 10 to 13 in your letter of January 17, 1984.

(7) Concerning your request for 5 year data listing of each ink as delivered, the amounts used, densities, % solids and any other constituents including make-up solvents; we simply do not have this data or know of any way to provide the details you ask for. At present, the best information we can provide is based on vendor supplied data and is attached. In order to consolidate our data, I'm submitting the charts that characterize the inks as either white or color and estimate the typical average specification for each type of ink. The reason for this, being that we run thousands of batches of inks and formulations a year and I doubt that we could provide better data by doing a detailed accounting, than already provided.

continued...

(7) Cont'd

The chart also provides the quantity and types of solvents that we use in the inks. We have no idea how much of the solvent was used as make-up (fugitive loss) and how much was used as dilution to bring the inks to an as-applied viscosity. Finally we are only able to submit data for three years - 1981, 1982 and 1983. Even with this data we have had to make some assumption and estimates, especially for 1981.

We do not purchase washup or cleaning solvents as such. We use either the clean new solvents in the colors when we finish a job or we reclaim solvent for washing machinery. The clean solvents used for cleaning printing decks and pumps are put into inks that are inventoried for reuse at the end of a job.

(8) Solid and liquid waste as well as solvent reclaimed for washup is as follows:

(A) Recylced - Reclaimed Flammable Liquid Numbers

Ship to: M & M Chemicals & Equipment Co.
U.S. Highway 11, North
Reece City
Etowan County, Alabama

I.D. # ACD070513767
Permit # ACD070513767

1979	No Records
1980	No Records
1981	31,680 gals. @ 15% solids estimated
1982	48,015 gals. @ 15% solids estimated
1983	52,800 gals. @ 15% solids estimated

VOC density estimated at 6.9#/gal.

(B) Solid Waste Numbers - Landfill

Ship to: Chemical Waste Management
P.O. Box 55
Emelle, Alabama 35459

I.D. No. ACD000622464

1979	No Records
1980	No Records
1981	14,960 gals. @ 30% solid estimated
1982	11,110 gals. @ 30% solid estimated
1983	1,155 gals. @ 30% solid estimated

VOC density estimated at 6.9#/gal.

continued...

Yours truly,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals

Kenneth H. Speckhals
Technical Manager

KHS:gh

Encls: Confidential Data

cc: T. Tittle
P. Wong
N. Wright
D.M. Ambrose

ATTACHMENT 10

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

October 25, 1984

Mr. Bruce Mitchell
Department of Environmental Agency
Twin Towers Building
2600 Blair Stone Road
Tallahassee, FL. 32301

Dear Mr. Mitchell:

RE: TELEPHONE DISCUSSION ON APPLICATION TO CONSTRUCT/MODIFY AIR POLLUTION SOURCES: AC 13-80716, AND AC13-79884

As per our telephone conversation, I believe the following information will clarify several of my responses and calculations to the completeness reviews question asked in various letters from the Department.

1. Arnold Cellophane is classified as a major source of VOC. In 1983 our records indicated that we emitted:

	Tons/Year
Paper Coating:	617.1
Graphic Arts:	613.3
Total:	1230.4

I have re-estimated emissions of P-5 which is presently still under a construction permit, AC 13-55914, and which is to be modified by the installation of a Pillar catalytic incinerator, AC 13-80716.

2. Estimate of potential emissions of P-5 after control with incinerator:

P-5 is expected to account for one third of the total output of our printing when the controls are installed. We do not expect to see substantial increase in production as P-2 will either be retired or permitted to run low solvent compliance inks.

P-5 emissions without control:

613.3 tons/yr. *(1/3) = 204.2 tons/year.

After control we estimate a 70% average capture on P-5 and a 95% reduction efficiency of the incinerator.

204.2 tons/year - 95% * (204.2 tons/year * 70%) = 68.4 tons/year

continued...

Since the potential emissions of P-5 exceeds 40 TPY, we propose LAER is the add-on-control system we plan to install.

In order to clarify our estimate of potential emmission on C-2 (permit application AC 13-80716), I am re-submitting the data and method of calculation.

3. Potential Emission for C-2

A. Estimate of maximum units of production in reams(3000 $ft.^2$) per year coated with LST, compliance material at/or less than 2.9 lbs. VOC per gallon applied, less water.

The following forecast is based on historical and test data:

average line speed	@	350 fpm
average web width	@	3.33 ft.
% utilization	@	60%

To calculate annual reams per year:

350 ft./min * 3.33 ft. * (1/3000 $ft.^2$/ream)* 60 min/hr * 6000 hr/yr * 60% = **83,900 reams/year**

B. Calculate lbs. of VOC per ream allowed by rule where the average content of the paper coating material does not exceed 2.9 lbs. VOC per gallon applied.

The following calculations are based on averaging paper coating material used in 1983 of 5 machines (L-2, L-3, L-5, L-6 and C-1)

	1000 units
coating (gals.)	220.08
coating (lbs.)	1689.7
VOC (lbs.)	1237.3
VOD (gals.)	173.13
water (lbs.)	62.7
water (gals)	8.94
solids (lbs.)	385.6
ream produced	215 (estimated)

(1) density of solids

385.6 lbs. solid * (1/(220.08 - 173.3 - 8.94 gal) = 10.19 lbs. solid/gal.

(2) density of VOC

1237.3 lbs. * (1/173.3 gal) = 7.15 lbs. VOC/gal

(3) convert 2.9 lbs. VOC per gallon applied less water into lbs. VOC per ream.

2.9 lbs. VOC * (1/7.15 lbs/gal) = .4056 gal. VOC/gal applied

1.00 gal. applied - .4056 gal. VOC = .5944 gal. solids

0.5944 gal. solid * 10.19 lgs. solid/gal. = 6.057 lbs. solid/gal. applied

continued...

2.9 lbs. VOC * (1/6.057 lbs/gal) = 0.479 lbs. VOC/lb. solids

385.6M lbs. solid * (1/215M reams) = 1.79 lb. solid/ream

0.479 lbs. VOC/lbs. solids * 1.79 lb. solid/ream = .857 lbs. VOC/ream

C. Calculate potential annual emission after control of VOC at 2.9# VOC per gal. applied less water.

83,900 ream/yr. * .857 lbs. VOC/ream *(1/2000 lbs./ton)= 36.0 ton VOC/yr.

I hope the information provided will be what is needed to complete the permitting process. If you have any questions, please call me.

Sincerly,

Kenneth H. Speckhals

KHS:mrs

cc: N. Wright, DER Tallahassee
P. Wong, DERM
T. Tittle, DER, W. Palm Beach

ATTACHMENT 11

ATTACHMENT 11

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

November 2, 1984

Mr. Bruce Mitchell
DER
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Mitchell:

Per your request, I have calculated VOC, nitrogen oxide and sulfur dioxide burner emissions of our combined plant for 1983. P-5 and C-2 are not included in the usage.

In 1983 we used 1.468×10^7 ft^3 of natural gas at 1069 Btu/ft. (average) and operated about 6000 hrs.

Based on the API data in table 1.4 - 1 all of our natural gas burners emitted:

	Actual (TPY)	Potential (TPY)	Potential #/Hr.
VOC	.039	0.05	0.017
Nxo	.735	1.00	0.32
SO_2	.004	.005	0.002

With the addition of C-2 and P-5, we estimate that each machine will increase natural gas usage by 10% of the total and the potential emissions would be as follows:

Potential	C-2	P-5
VOC-TPY	0.005	0.005
VOC Lbs/Hr.	0.0017	0.0017
NxO TPY	0.100	0.100
NxO Lbs./Hr.	0.032	0.032
SO_2 TPY	0.0005	0.0005
SO_2 Lbs/Hr	0.0002	0.0002

Continued...

I hope this information is sufficient, please call me if you have any questions.

Sincerely yours,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals
Technical Manager

KHS:gh

ATTACHMENT 12

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Arnold Cellophane Corporation file

FROM: Bruce Mitchell BM

DATE: November 19, 1984

SUBJECT: Pollutant Emission Projections from Natural Gas Fired Driers/Heaters - based on AP-42 Emission Factors Table 1-4.1 and Kenneth H. Speckhals' letter, dated 11/2/84.

Natural Gas Usage per Year

Existing facility: 1.468×10^7 ft^3

P-5: 10% of existing facility

Pollutant Emissions

°Particulate matter (PM): 5 lbs/10^6 ft^3

Existing facility: 73.4 lbs/year = 0.04 TPY

P-5: 0.004 TPY

°Sulfur dioxide (SO_2) : 0.6 lb/10^6 ft^3

Existing facility: 9 lbs/year = trace

P-5: trace

BM/rw

TABLE 1.4-1. UNCONTROLLED EMISSION FACTORS FOR NATURAL GAS COMBUSTION[a]

Furnace Size & Type (10^6 Btu/hr heat input)	Particulates[b]		Sulfur[c] Dioxide		Nitrogen[d,e] Oxide		Carbon[f,g] Monoxide		Volatile Organics Nonmethane		Methane	
	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$
Utility boilers (>100)	16-80	1-5	9.6	0.6	8800[h]	550[h]	640	40	23	1.4	4.8	0.3
Industrial boilers (10 - 100)	16-80	1-5	9.6	0.6	2240	140	560	35	44	2.8	48	3
Domestic and commercial boilers (<10)	16-80	1-5	9.6	0.6	1600	100	320	20	84	5.3	43	2.7

[a] All emission factors are expressed as weight per volume fuel fired.
[b] References 15-18.
[c] Reference 4 (based on an average sulfur content of natural gas of 4600 $g/10^6$ Nm^3 (2000 $gr/10^6$ scf).
[d] References 4-5,7-8,11,14,18-19,21.
[e] Expressed as NO_2. Test results indicate that about 95 weight % of NO_x is NO.
[f] References 4,7-8,16,18,22-25.
[g] References 16 and 18. May increase 10 to 100 times with improper operation or maintenance.
[h] Use 4400 $kg/10^6$ m^3 (275 $lb/10^6ft^3$) for tangentially fired units. At reduced loads, multiply this factor by the load reduction coefficient given in Figure 1.4-1. See text for potential NO_x reductions by combustion modifications. Note that the NO_x reduction from these modifications will also occur at reduced load conditions.

ES ENGINEERING-SCIENCE

501 WILLARD STREET • DURHAM, NORTH CAROLINA 27701 • 919 / 682-9611

September 25, 1985

Kenneth Speckhals
Arnold Cellophane Corporation
20400 S. W. 112th Avenue
Miami, Florida 33157

Dear Ken:

Enclosed please find the analytical results of the EPA Method 25 tests conducted at your facility on September 6.

Results of the 3 sets (inlet/outlet) of samples collected show incinerator efficiencies (for the destruction and removal of total gaseous non-methane organics expressed as parts per million of carbon) of 94.6%, 96.7% and 95.2%. This should prove adequate demonstration of compliance with your emission regulations.

Sampling procedures employed by ES were in accordance with EPA Method 25 (40 CFR 60, Appendix A). Sample analysis was conducted by Research Triangle Laboratories. The experimental procedure utilized can be found in the attached portion of this letter. Also included are the field data sheets.

If you have any questions or require any further information, please do not hesitate to call. It has been a pleasure working with you on this project and I look forward to working with you again in the future.

Very truly yours,

ENGINEERING-SCIENCE

David Krask

DK:jw

Enclosures

RESEARCH TRIANGLE LABORATORIES
P. O. BOX 12507 · RESEARCH TRIANGLE PARK, N. C. 27709 · (919) 544-5146

September 12, 1985

Mr. Dave Krask
ENGINEERING SCIENCE
Two Flint Hill
10521 Rosehaven Street
Fairfax, VA 22030

Reference: P. O. #56349, RTL #25-38-04

Dear Mr. Krask:

We enclose the report for the Method 25 samples analyzed September 9 through 11. The report consists of an experimental procedure, a sample calculation, a set of data reports, and a summary table of results.

Note that the Inlet samples (#1,3,5) were done first followed by the Outlet samples (#2,4,6) and the Blank sample.

Let us know if you have any problems. Thank you for choosing us for your Method 25 analyses.

Sincerely,

John Y. Morimoto, Ph.D.
Chemist

JYM:cyb

Enclosures

RESEARCH TRIANGLE LABORATORIES
METHOD 25 TABLE OF RESULTS

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/8

Sample Number	Sample Description	Concentrations (ppmC) CO+CH4	CO2	Noncondensibles	Condensibles	TGNMO	Mass Conc (mgC/cu.m
1	AC-I-1	11	2808	1112	540	1652	823
2	AC-O-1	23	8729	50	39	90	45
3	AC-I-2	24	1336	1241	365	1606	800
4	AC-O-2	41	6205	22	31	53	26
5	AC-I-3	27	3599	1353	569	1921	957
6	AC-O-3	43	8200	42	51	93	46
7	Blank	0	311	17	0	17	8

METHOD 25 EXPERIMENTAL PROCEDURE

Calibration

A 1.00% CO_2 calibration standard was injected via a 1 mL sampling loop into the analyzer. The injections were repeated until three successive integrated areas indicate reasonable (<5%) agreement. An 83.0 ppm toluene standard was then run with the same requirement.

Prior to each run, two injections of either the CO_2 or the toluene standard (these are run alternately) were made. Three or four injections of both standards were made after the final sample each day.

Response factors were calculated (average integrated area/concentration in ppmC) and the response factors for each run were obtained by interpolation of the closest response factors before and after that run.

Analysis

Each trap was stored with dry ice until just prior to analysis and was flushed of CO_2 by passing zero air through it at 0°C and via the CO_2 NDIR to the sample tank. Flushing was continued until no NDIR response was noted. The trap was baked at 500°C with zero air flushing through the trap and via the oxidation catalyst and the NDIR into the collection vessel. Baking was continued until no NDIR response was noted.

The sample tank was analyzed by injecting via a 1 mL sample loop onto the GC column, which was held at 0°C to elute the $CO+CH_4$ and then the CO_2 which were passed to the oxidation catalyst, reduction catalyst, and FID. The column was then backflushed at 100°C to elute the noncondensibles. The collection vessel was analyzed identically. In both cases, triplicate injections were made.

5/23/85

RESEARCH TRIANGLE LABORATORIES
METHOD 25 SAMPLE CALCULATION

Note: All pressure values have been converted when necessary to mm Hg and all temperature values to Kelvin.

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/8

Sample # 1 AC-I-1

DATA

Tank new 83:
Volume (cu.m) = 0.004563

	Pressure (mm Hg)	Temp. (K)
Presampling	5.0	302.6
Postsampling	133.0	302.6
Final	865.4	297.2

Trap BP

Collection Vessel:
Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp. (K)
Final	1124.7	332.2

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	340	414
Blank (ppmC)	0.0	
Blank Area (area units)		6112

Areas:

CO + CH4	982	0	702
CO2	138,690	138,950	138,340
Noncondensibles	72,766	71,921	74,280
Condensibles	42,558	43,348	42,557

CALCULATIONS

Measured Concentrations, corrected for blank:

Cm(CO+CH4) = Area(CO+CH4)/RF(CO2)
= 982 /340 = 2.9
= 0 /340 = 0.0
= 702 /340 = 2.1

Cm(CO2) = Area(CO2)/RF(CO2)
= 138690 /340 = 407.9
= 138950 /340 = 408.7
= 138340 /340 = 406.9

Cm(Noncondensibles) = [Area(Noncondensibles) - Blank Area(NMO)]/RF(NMO)
= (72766 - 6112)/414 = 161.0
= (71921 - 6112)/414 = 159.0
= (74280 - 6112)/414 = 164.7

Cm(Condensibles) = Area(Condensibles)/RF(CO2) - Blank(CO2)
= 42558 /340 - 0 = 125.2
= 43348 /340 - 0 = 127.5
= 42557 /340 - 0 = 125.2

Pressure-Temperature Ratio, Q(i) = P(i)/T(i):

postsampling tank: Q(1) = 133 / 302.5945 = .4395322
presampling tank: Q(2) = 5 / 302.5945 = 1.652377E-02
final tank: Q(3) = 865.378 / 297.15 = 2.91226
final CV: Q(4) = 1124.712 / 332.15 = 3.386157

Averages and % Relative Standard Deviations (%RSD) of Cm's are calculated.
(%RSD of C = %RSD of Cm)

Calculated Concentrations:

C(CO+CH4) = Q(3)/[Q(1)-Q(2)] x Cm(CO+CH4)
= 2.9123/(0.4395 - 0.0165) x 1.7 = 11.4

C(CO2) = Q(3)/[Q(1)-Q(2)] x Cm(CO2)
= 2.9123/(0.4395 - 0.0165) x 407.8 = 2807.7

C(Noncondensibles) = Q(3)/[Q(1)-Q(2)] x Cm(Noncondensibles)
= 2.9123/(0.4395 - 0.0165) x 161.5 = 1112.1

C(Condensibles)
= Volume(CV)/Volume(Tank) x Q(4)/[Q(1)-Q(2)] x Cm(Condensibles)
= 0.002443/0.004563 x 3.3862/(0.4395 - 0.0165) x 125.9 = 539.8

Total Gaseous Non-Methane Organics(TGNMO)=C(Noncondensibles)+C(Condensibles)
= 1112.1 + 539.8
= 1651.9

Mass Concentration = 0.498 x TGNMO
= 0.498 x 1651.9 = 822.6

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/83

Sample # 1 AC-I-1

TANK new 83:
Volume (cu.m) = 0.004563

TRAP BP

COLLECTION VESSEL:
Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	5.0	302.6			
Postsampling	133.0	302.6			
Final	865.4	297.2	Final	1124.7	332.2

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	340	414
Blank (ppmC)	0.0	
Blank Area (area units)		6112

Areas:

CO + CH4	982	0	702
CO2	138,690	138,950	138,340
Noncondensibles	72,766	71,921	74,280
Condensibles	42,558	43,348	42,557

Concentrations (ppmC):

		%RSD
CO + CH4	11.3664	90.1223
CO2	2807.7170	0.2208
Noncondensibles	1112.1350	1.7872
Condensibles	539.7701	1.0658
TGNMO	1651.9050	

(= 822.6488 mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/85

Sample # 3 AC-I-2

TANK new 72:
Volume (cu.m) = 0.004555

TRAP BU COLLECTION VESSEL:
Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	0.0	305.4			
Postsampling	331.0	305.4			
Final	903.5	297.2	Final	1118.1	332.7

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	337	420
Blank (ppmC)	0.0	
Blank Area (area units)		6112

Areas:

CO + CH4	2,538	2,785	3,290
CO2	160,180	161,290	160,220
Noncondensibles	192,000	191,200	192,690
Condensibles	76,452	73,161	72,355

Concentrations (ppmC):		%RSD	
CO + CH4	23.8972	13.3509	
CO2	1336.4720	0.3921	
Noncondensibles	1241.2510	0.4012	
Condensibles	365.1506	2.9335	
TGNMO	1606.4020		
	(=	799.9882	mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/83

Sample # 2 AC-0-1

TANK new 68: TRAP BT COLLECTION VESSEL:
Volume (cu.m) = 0.004576 Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	0.0	302.6			
Postsampling	509.0	302.6			
Final	942.3	298.2	Final	1149.6	332.2

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	321	379
Blank (ppmC)	0.0	
Blank Area (area units)		2480

Areas:

CO + CH4	3,888	4,060	3,957
CO2	1,480,100	1,494,100	1,499,600
Noncondensibles	12,438	12,903	12,600
Condensibles	11,764	11,219	11,463

Concentrations (ppmC):		%RSD	
CO + CH4	23.2284	2.1812	
CO2	8729.0350	0.6742	
Noncondensibles	50.4045	2.3216	
Condensibles	39.2923	2.3776	
TGNMO	89.6968		
	(=	44.6690	mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/93

Sample # 4 AC-0-2

TANK new 75:
Volume (cu.m) = 0.004551

TRAP BZ

COLLECTION VESSEL:
Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp.(K)		Pressure (mm Hg)	Temp.(K)
Presampling	0.0	305.4			
Postsampling	454.0	305.4			
Final	987.6	298.2	Final	1151.9	332.7

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	329	407
Blank (ppmC)	0.0	
Blank Area (area units)		2480

Areas:

CO + CH4	6,172	5,949	6,079
CO2	916,740	916,060	916,160
Noncondensibles	6,307	6,748	6,250
Condensibles	8,251	8,068	8,259

Concentrations (ppmC):		%RSD	
CO + CH4	41.0821	1.8463	
CO2	6205.1190	0.0401	
Noncondensibles	21.6497	6.8915	
Condensibles	31.1346	1.3187	
TGNMO	52.7842		
	(=	26.2866	mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/8

Sample # 5 AC-I-3

TANK new 71:
Volume (cu.m) = 0.004564

TRAP CS COLLECTION VESSEL:
Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp.(K)		Pressure (mm Hg)	Temp.(K)
Presampling	4.0	305.4			
Postsampling	382.0	305.4			
Final	922.5	297.7	Final	1194.1	333.7

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	336	426
Blank (ppmC)	0.0	
Blank Area (area units)		6112

Areas:

CO + CH4	3,675	3,625	3,765
CO2	482,920	482,160	483,910
Noncondensibles	236,780	235,870	236,050
Condensibles	124,290	123,260	122,820

Concentrations (ppmC):		%RSD	
CO + CH4	27.4854	1.9235	
CO2	3599.2860	0.1817	
Noncondensibles	1332.5670	0.2094	
Condensibles	568.6221	0.6111	
TGNMO	1921.1890		
	(=	956.7521	mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/89

Sample # 6 AC-0-3

TANK new 69:
Volume (cu.m) = 0.004574

TRAP BW

COLLECTION VESSEL:
Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	0.0	305.4			
Postsampling	502.0	305.4			
Final	923.3	298.2	Final	1140.2	332.2

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	336	415
Blank (ppmC)	0.0	
Blank Area (area units)		2480

Areas:

CO + CH4	7,581	7,654	7,602
CO2	1,463,000	1,464,600	1,460,400
Noncondensibles	11,743	14,165	9,320
Condensibles	15,915	14,616	15,513

Concentrations (ppmC):		%RSD	
CO + CH4	42.6784	0.4937	
CO2	8200.4030	0.1449	
Noncondensibles	42.0453	26.1534	
Condensibles	50.9465	4.3330	
TGNMO	92.9918		
	(=	46.3099	mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES
METHOD 25 DATA REPORT

Name: ENGINEERING-SCIENCE ID #25-38-04 Date: 9/10-11/88

Sample # 7 Blank

TANK new 66: TRAP None COLLECTION VESSEL:
Volume (cu.m) = 0.004578 Volume (cu.m) = 0.002443

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	0.0	305.4			
Postsampling	185.0	305.4			
Final	966.5	298.7	Final	754.6	1.0

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	335	425
Blank (ppmC)	0.0	
Blank Area (area units)		2480

Areas:

CO + CH4	0	0	0
CO2	19,634	19,553	19,379
Noncondensibles	3,990	3,898	3,578
Condensibles	0	0	0

Concentrations (ppmC):		%RSD	
CO + CH4	0.0000	0.0000	
CO2	311.2886	0.6674	
Noncondensibles	16.8674	16.1147	
Condensibles	0.0000	0.0000	
TGNMO	16.8674		
	(=	8.3999	mgC/cu.m)

RESEARCH TRIANGLE LABORATORIES

P. O. BOX 12507 - RESEARCH TRIANGLE PARK, N. C. 27709 - (919) 544-5146

METHOD 25 SAMPLING DATA: REQUIRED FOR ANALYSIS CALCULATIONS

SAMPLE # AC-I-1 TANK # 83 TRAP # BP

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	760	30.12 (765)	85
Post-test	632	"	"

Pre-test Leak OK Post-test Leak OK

START 1056 FINISH 1156

****

SAMPLE # AC-O-1 TANK # 68 (862) TRAP # BT

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	765	765	85
Post-test	256	"	"

Pre-test Leak OK Post-test Leak OK

START 1059 FINISH 1159

****

SAMPLE # AC-I-2 TANK # 72 TRAP # BU

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	765	765	90
Post-test	434	"	01

Pre-test Leak OK Post-test Leak OK

START 1212 STOP 1312

****

SAMPLE # AC-O-2 TANK # 75 TRAP # BZ

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	765	765	90
Post-test	311	"	

Pre-test Leak OK Post-test Leak OK

START 1215 STOP 1315

****

RESEARCH TRIANGLE LABORATORIES

P. O. BOX 12507 · RESEARCH TRIANGLE PARK, N. C. 27709 · (919) 544-5146

METHOD 25 SAMPLING DATA: REQUIRED FOR ANALYSIS CALCULATIONS

SAMPLE # AC-I-3 TANK # 71 TRAP # CS

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	761	765	90
Post-test	383	"	

Pre-test Leak OK Post-test Leak OK

START 1328 STOP 1428

****

SAMPLE # AC-O-3 TANK # 69 TRAP # BW

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	765	765	90
Post-test	263	"	

Pre-test Leak OK Post-test Leak OK

START 1332 STOP 1432

****

SAMPLE # BLANK TANK # 66 ~~772~~ ~~992~~ TRAP #

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test	765	765	90
Post-test	580		

Pre-test Leak OK Post-test Leak

****

SAMPLE # TANK # TRAP #

	Tank Vacuum, mm Hg	Barometer mm Hg	Ambient Temp, °C
Pre-test			
Post-test			

Pre-test Leak Post-test Leak

****

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

November 21, 1984

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Dear Mr. Speckhals:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to install a catalytic incinerator with an associated capture and transport system on flexographic printing press designated P-5 at your existing facility in Dade County, Florida.

Before final action can be taken on your draft permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Dade County no later than fourteen days after receipt of this letter. The department must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permit.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa
Attachments
cc: T. Tittle
P. Wong
D. M. Ambrose
D. Thompson

State of Florida
Department of Environmental Regulation
Notice of Proposed Agency Action
on Permit Application

The Department of Environmental Regulation gives notice of its intent to issue a permit to Arnold Cellophane Corporation to install a catalytic incinerator with an associated capture and transport system on flexographic printing press designated P-5 to be located at Arnold Cellophane Corporation's existing facility at 20400 S.W. 112th Avenue, Miami, Dade County, Florida. A determination of lowest achievable emission rate (LAER) was required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitutes a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this preliminary statement. Therefore, persons who may not object to the proposed agency action may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Southeast District
3301 Gun Club Road
West Palm Beach, Florida 33402

Dade County Dept. of Environmental Resources Management
909 Southeast 1st Avenue
Brickell Plaza
Miami, Florida 33131

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an Application for Permit by	)	
Arnold Cellophane Corporation 20400 S.W. 112th Avenue Miami, Florida 33157	)	DER File No. AC 13-079884

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its Intent to Issue, and proposed order of issuance for, a permit pursuant to Chapter 403, Florida Statutes, for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Arnold Cellophane Corporation, applied on December 19, 1983, to the Department of Environmental Regulation for a permit to install a catalytic incinerator with associated capture and transport system on flexographic printing press designated P-5 in Miami, Dade County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The applicant was officially notified by the Department that an air construction permit was required for the proposed work.

This intent to issue shall be placed before the Secretary for final action unless an appropriate petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes, is filed within fourteen (14) days from receipt of this letter or

publication of the public notice (copy attached) required pursuant to Rule 17-103.150, Florida Administrative Code, whichever occurs first. The petition must comply with the requirements of Section 17-103.155 and Rule 28-5.201, Florida Administrative Code (copy attached) and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301.

Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witness and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exception to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition, may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of

Administrative Hearings, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahase, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statues.

Executed the 21 day of NOVEMBER, 1984, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Kenneth H. Speckhals, Arnold Cellophane Corporation
D. M. Ambrose, P.E., D. M. Ambrose Associates
Tom Tittle, DER Southeast District
Dan Thompson, DER Office of General Counsel
Patrick Wong, Dade County Department of Environmental Resources Management

Technical Evaluation
and
Preliminary Determination

Arnold Cellophane Corporation
Dade County
Miami, Florida

Permit Number:
AC 13-79884

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

I. Project Description

A. Applicant

Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

B. Project and Location

A construction permit, No. AC 13-55914, was issued on November 2, 1982, for the construction/installation of a new flexographic printing press and associated natural gas fired drier/heater, designated P-5 (originally P-6), pursuant to Florida Administrative Code (FAC) Rule 17-2.650(1)(f)16., Graphic Arts Systems. Because low solvent technology (LST) was unachievable with P-5, the applicant has applied for a construction permit to install a catalytic incinerator with an associated vapor capture and transport system.

The existing facility is located at the above address in Dade County, Florida, with UTM coordinates of Zone 17, 563.2 km East and 2828.6 km North.

C. Process and Controls

Flexographic printing press P-5 will use primarily polypropylene film substrates and is scheduled to operate twenty-four hours per day, five days per week. Actual operation was approximated at 6,000 hours per year.

The flexographic printing process uses a rubber image carrier located above the surface of the plate, is usually web fed, and runs on a variety of substrates. After the application of a solvent based ink to the surface of a moving web or film, the solvent is evaporated using heated air produced by the associated drier/heater. The solvent laden air is then exhausted into the atmosphere or through a control device with an associated vapor capture and transport system.

The applicant proposes to install a ComCat catalytic incinerator manufactured by Pillar Corporation. Necessary enclosures and ducting will be installed to capture the pollutant vapors emitted during the drying process. A determination of LAER (Lowest Achievable Emission Rate) will be proposed to establish the overall vapor capture and transport efficiency for the VOC delivered to the substrate and the final destruction efficiency for the catalytic incinerator of the VOC delivered to the inlet of the incinerator.

Some in-house preventive maintenance procedures will be required to maintain minimum fugitive VOC (volatile organic compounds and organic solvents) emissions from the operation of P-5:

- maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
- where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
- all fittings, valves, lines, etc., shall be properly maintained;
- prevent excessive turbulence across any exposed VOC;
- all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
- maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

II. Rule Applicability

The pollutants projected to be emitted from P-5 are VOC, particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO_2), in accordance with FAC Rule 17-2.100.

The following (Table 1) will display the annual potential pollutant emissions in tons per year (TPY) from the existing facility and based on 1983 data:

Table 1

Existing Facility	Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO_2
Graphic Arts	613.3				
Paper Coating	617.1				
Driers/Heaters	0.04	0.04	0.73	0.15	trace
TOTAL:	1230.44				

*Note:
- Driers/Heaters: Emissions (products of combustion) based on AP-42 Emission Factors Table 1.4-1.
- Driers/Heaters: VOC emissions are estimated for nonmethane.

The existing facility is major for the pollutant VOC in accordance with FAC Rule 17-2.100(98) and is located in an area designated nonattainment for the pollutant ozone in accordance with FAC Rule 17-2.410(1)(d). VOC's are precursors to ozone.

The following (Table 2) will display the annual projected potential pollutant emissions in TPY for P-5:

Table 2

P-5	Projected Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO_2
Flexographic printing press	204.2				
Drier/heater	0.004	0.004	0.073	0.015	trace

*Note:
- P-5 unit is estimated to increase natural gas usage by 10% of the facility's current usage.
- Drier/heater: Emissions (products of combustion) based on AP-42 Emission Factors, Table 1.4-1.
- Drier/heaters: VOC emissions are estimated for nonmethane.

The VOC potential emissions projected for P-5 shall be reviewed in accordance with FAC Rule 17-2.510, New Source Review for Non-attainment Areas.

Since the projected potential VOC emissions for P-5 are greater than the significant emission rates (40 TPY VOC) displayed in Table 500-2, pursuant to FAC Rule 17-2.510(2)(e)2., the source's VOC emissions shall be reviewed in accordance with FAC Rule 17-2.510(2)(d) 4.a., Modifications to Major Facilities. Therefore, P-5 shall be subject to the provisions of FAC Rule 17-2.510(4), Preconstruction Review Requirements.

Under FAC Rule 17-2.510(4)(a), P-5 is subject to a determination of LAER on the affected pollutant VOC. LAER is to be determined in accordance with FAC Rule 17-2.640. For LAER, the applicant proposed to retrofit a catalytic incinerator with a capture and transport system, having an overall capture efficiency of 70% of the VOC delivered to the substrate and a 95% total destruction of the VOC captured and transported to the

inlet of the catalytic incinerator. The Bureau proposes that LAER (see attachment) be the same as that requested by the applicant. Therefore, with the application of LAER, the following (Table 3) will exhibit the projected VOC potential emissions in TPY:

Table 3

	Projected VOC Potential Emissions (TPY)
P-5	68.4

Note: ° Based on 70% overall capture and transport efficiency of the VOC delivered to the substrate and 95% total destruction of the VOC captured and transported to the inlet of the catalytic incinerator.

In order to comply with the provisions of FAC Rule 17-2.510(4)(b), Arnold Cellophane Corporation signed a Delayed Compliance Consent Order (DCO) with the Department for the existing facility. The DCO was signed on September 10, 1984. Since a DCO is subject to USEPA Region IV approval, the proposed rule (DCO) appeared in the Federal Register, Vol. 49, No. 196, dated October 9, 1984.

Pursuant to FAC Rule 17-2.510(4)(c), there is sufficient new source allowance for Dade County, as displayed in Table 510-1, to allow the construction/installation of P-5. Therefore, VOC emission offsets shall not be required.

Because the new source allowance of VOC is available, the proposed project satisfies the provisions of FAC Rule 17-2.510(4)(d)1.a., Net Air Quality Improvement Requirement - Nonattainment Areas with Approved SIP.

Satisfying the review of the affected pollutant VOC, pursuant to FAC Rule 17-2.510(2)(d)4.a., the VOC emission standards will be permitted in accordance with the proposed LAER determination, pursuant to FAC Rule 17-2.510(4)(a).

The products of combustion of the natural gas in the associated drier/heater are less than 0.10 TPY (see Table 2) and will become a part of the waste stream captured and transported to and oxidized by the catalytic incinerator.

A compliance test will be required to ascertain the actual overall collection and destruction efficiencies of the retrofitted VOC control system pursuant to the proposed LAER determination and will be accomplished by the following:

° The destruction efficiency of the catalytic incinerator of the pollutant vapors delivered to it shall be determined by establishing and comparing the inlet and outlet concentrations using EPA Method 25, which is the test method required of sources with add-on destructive control devices that are subject to FAC Rule 17-2.650(1)(f)16.b.(1)(C) and pursuant to FAC Rule 17-2.700, Stationary Point Source Emissions Test Procedures.

° Since there is no official EPA test method for measuring capture and transport efficiency, the following methodology will be utilized:

-the determination of the volatile organic matter content and the density of the printing inks shall be in accordance with 40 CFR 60, Appendix A, Method 24A or as provided from the vendor(s).
-a 24-hour testing cycle is to be used and is to represent a typical operating cycle.
-capture and transport efficiency is to be assessed using the following formula, which is based on measurements and/or calculations:

capture and transport efficiency	=	mass of VOC delivered to the incinerator inlet/time	÷	mass of VOC delivered to the substrate/time

-all fugitive VOC emissions are to be accounted for: clean-up solvents, make-up solvents (solvents used to maintain ink viscosity), and solvent spillage make up the majority of the fugitive VOC emissions.

The source is subject to the provision of FAC Rule 17-2.620(1)(a), which states that no person shall store, pump, handle, process, load, unload or use in any process or installation volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. Therefore, some in-house preventive maintenance procedures shall be required (see Section I.C.).

The source is subject to the provisions of FAC Rule 17-2.620(2), which states that no person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. Therefore, objectionable odors shall not be allowed on off-plant property.

The source is subject to the provisions of FAC Rule 17-2.240, which states that no person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. Therefore, an electrical interlock shall be installed such that P-5 is prevented from operating without its associated vapor control system.

The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and the Dade County's Environmental Resources Management. File all written reports with the same offices.

III. Summary of Emissions and Air Quality Analysis

A. Emission Limitations

In applying the provisions of FAC Rule 17-2.510(4), the source was subject to the determination of LAER. Efficiencies were established for the vapor control system to be retrofitted, which are "70% overall capture and transport of the VOC delivered to the substrate" and "95% total destruction of the VOC delivered to the catalytic incinerator inlet".

The emission limitations are in compliance with the applicable requirements of FAC Chapter 17-2.

B. Air Quality Analysis

An air quality analysis was not required.

IV. Conclusions

With the application of LAER requiring the installation of an add-on vapor control system, the VOC emissions reduction will be greater than with the application of the source specific RACT rule. Also, with the retrofitting of the same VOC control system to the existing facility's graphic arts system units (P-1, P-2, P-3, and P-4), the facility VOC emissions will be greatly reduced. For the VOC emissions from the existing facility's graphic arts system units, the applicant must only demonstrate 90% total destruction of the VOC delivered to the incinerator inlet when operating without P-5. However, whenever P-5 is to be operated with any of the existing graphic arts system units, the LAER established destruction efficiency shall prevail.

Since there is no approved method to assess an overall capture and transport efficiency, a post compliance test(s) review and comment period will be established with the applicant,

the Dade County's Environmental Resources Management, the DER's Southeast Florida District, the DER's Bureau of Air Quality Management, and the Region IV USEPA, to ascertain if the compliance test(s) did verify the guidelines established through the determination of LAER.

The General and Specific Conditions are listed in the attached proposed permit.

ATTACHMENT

PROPOSED LAER

Lowest Achievable Emission Rate (LAER) Determination
Arnold Cellophane Corporation
Dade County

The applicant has installed a flexographic press at their facility located in Miami, Florida. The unit, designated as No. P-5, is used primarily with oriented polypropylene film substrates and is scheduled to operate a twenty-four hour day, five days a week.

The flexographic printing process uses a rubber image carrier located above the surface of the plate, is usually web fed, and runs on a variety of substrates. Basically, the process is the application of an alcohol based ink to the surface of a moving web or film, then rapid solvent evaporation using heated air. The solvent laden air is currently exhausted from the system directly into the atmosphere.

The solvent vapors are defined as volatile organic compounds (VOC's) and when discharged to the atmosphere contribute significantly to air pollution, which may reasonably be anticipated to endanger public health or welfare. VOC emissions are most significant as air pollutants in their role of photochemical oxidant precursors.

The dryer is the major source of VOC emissions with a lesser amount emitted at the ink fountain, the press, and the chill rolls. Vapor capture systems are necessary to minimize VOC vapor loss around the ink fountain and at the chill rolls. VOC emissions can also be reduced by using low solvent technology inks, if compatible with the planned line substrate.

The Arnold Cellophane plant is located in Dade County, which is classified nonattainment for the pollutant ozone, Rule 17-2.410. The additional press will result in ozone (VOC) emissions that will exceed the 40 ton per year significant emission rate by approximately 30 tons per year, Table 500-2 Regulated Air Pollutants - Significant Emission Rates.

This is a modification to a major facility, thus subject to the provisions of Rule 17-2.510(2)(d)4.a. The application and employment of Lowest Achievable Emission Rate (LAER) is a preconstruction review requirement (Rule 17-2.510(4)(a)). The procedure for determining LAER is set forth in Rule 17-2.640.

LAER Determination Requested by the Applicant:

Enclosures and ducts will be installed to capture 70 percent of the VOC vapors emitted at the press. The vapors will be conveyed to a new catalytic incinerator designed to convert 95 percent of the VOC's to innocuous CO_2 and water by rapid oxidation.

Date of Receipt of a LAER application:

October 25, 1984

Review Group Members:

This determination was based upon comments received from the New Source Review Section, the Southeast Florida District, Dade County Department of Environmental Resources Management, and USEPA-Region IV.

LAER Determined by DER:

Pollutant	Emission Limit
Ozone (VOC)	70 percent capture efficiency of the VOC vapors emitted at the press and 95 percent destruction of the collected vapors by the catalytic incinerator

LAER Determination Rationale:

In flexographic printing from stationary sources, volatile organic compounds (VOC's) can be released to the atmosphere by evaporation from the inking, cleaning, and curing operations. Hydrocarbons comprise a class of VOC's containing only carbon and hydrogen in various combinations. Most of these compounds and their by-products are considered poisonous, but most are harmful only in very high concentrations. Hydrocarbons can react with other chemicals, notably in the photochemical reaction, which results in the oxidants commonly called smog.

To control VOC emissions the applicant first considered using waterborne inks instead of organic solvent inks. They experimented with waterborne inks but concluded that, even though promising, waterborne inks are not yet well enought developed for their printing requirements. Only add-on control devices remain for consideration.

The three most popular types of add-on devices are those for thermal and catalytic incineration and carbon absorption. The applicant will use a catalytic incinerator to reduce by 95% the amount of VOC's discharged to the atmosphere when No. P-5 is operating. The add-on unit will be a ComCat catalytic incinerator manufactured by Pillar Corporation. The applicant will install the necessary enclosures and ducting at No. P-5 to capture 70 percent of the vapors generated. The VOC destruction efficiency of the catalytic incinerator will be 95%. The planned incinerator and press ducting modifications will result in 136 less tons of VOC's discharged into the atmosphere per year.

The Department, when preparing a Lowest Achievable Emission Rate (LAER) determination, shall give consideration to and make a determination that reflects: 1) any information published by the USEPA including the BACT/LAER Clearinghouse, 2) the most strigent emission limitation which is contained in the implementation plan of any State, 3) the most stringent emission limitation which is achieved in practice, and 4) all scientific, engineering, technical material, or other relevant information available to the department.

The latest (May 1984) BACT/LAER Clearinghouse summary lists data for eight facilities in the graphic arts category, half of which are rotogravure systems. Most of the efficiencies reported were based on a stack test for the control device and did not include the capture efficiency of the vapors generated at the emission point. At one of the listed facilities a material balance around the control device and vapor collection system was done. The control device efficiency was 95% and the capture efficiency was 73%. This facility did not have to meet LAER.

The literature research indicates that a 95% efficiency of a catalytic incinerator and a vapor system capture efficiency between 70-73 percent are the most stringent limits that meet the LAER requirement as set forth in Rule 17-2.510(4)(b). The department agrees that the VOC emission limit for No. P-5, as proposed by the applicant, is LAER.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

_____
C. H. Fancy, Deputy Chief, BAQM

_____
Date

Approved by:

_____
Victoria J. Tschinkel, Secretary

_____
Date

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Arnold Cellophane Corporation
20400 Southwest 112th Ave.
Miami, Florida 33157

Permit Number: AC 13-79884
Expiration Date: September 1, 1985
County: Dade
Latitude/Longitude: 25° 34' 30" N/
80° 22' 15" W
Project: Installation of a catalytic incinerator with an associated capture and transport system on a flexographic printing press designated P-5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility show on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction/installation of a catalytic incinerator with an associated capture and transport system to be retrofitted to the new flexographic printing press designated P-5 (originally P-6: see construction permit No. AC 13-55914, issued 11/2/82). The overall capture and transport efficiency and the destructive efficiency of the add-on control system was established in a LAER determination, pursuant to FAC Rule 17-2.510(4).

The construction/installation shall be in accordance with the permit application and plans, documents, amendments, and drawings, except as otherwise noted on pages 5-7 of the "Specific Conditions".

Attachments are as follows:

1. Construction permit No. AC 13-55914 and its attachments, modifications and amendments.
2. Kenneth H. Speckhals' letter, dated 12/16/83, with an Application to Construct Air Pollution Sources: DER Form 17-1.202.
3. Interoffice Memorandum, dated 1/9/84, from I. Goldman, T. Tittle and J. Guidry.
4. Victoria J. Tschinkel's letter with attachment, dated 1/16/84.
5. C.H. Fancy's letter, dated 1/17/84.
6. Kenneth H. Speckhals' letter with attachments, dated 1/30/84.
7. D.M. Ambrose's letter with attachments (includes updated application), dated 5/8/84.
8. C.H. Fancy's letter with attachment, dated 6/8/84.
9. Kenneth H. Speckhals' letter with attachments, dated 7/23/84.
10. Kenneth H. Speckhals' letter, dated 10/25/84.
11. Kenneth H. Speckhals' letter, dated 11/2/84.
12. Interoffice Memorandum, dated 11/19/84, from Bruce Mitchell.

PERMITTEE:
Arnold Cellophane Corporation

Permit Number: AC 13-79884
Expiration Date: September 1, 1985

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD).
( ) Compliance with New Source Performance Standards.
(x) Determination of Lowest Achievable Emission Rate (LAER).

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The source, designated P-5, is subject to the emission standards established through a determination of LAER, which requires "70% overall capture and transport efficiency of the VOC delivered to the substrate" and "95% total destruction of the VOC delivered to the inlet of a catalytic incinerator". The add-on catalytic incinerator is a ComCat manufactured by Pillar Corporation.

2. Compliance tests shall be required to verify the LAER determined efficiencies:

° Catalytic incinerator destruction efficiency:
-The inlet and outlet VOC concentrations shall be determined by using EPA Method 25. Dividing the outlet concentration by the inlet concentration will provide the penetration. Therefore, 1 - Penetration = destruction efficiency.

SPECIFIC CONDITIONS:

° Capture and transport efficiency:
-The volatile organic matter content and the density of the inks shall be determined using EPA Method 24A or is to be provided by the vendor(s).
-A testing cycle will be 24-hours in duration and is to be representative of a typical flexographic printing press opeation.
-The capture and transport efficiency is to be assessed using the following formula, which is based on measurements and/or calculations:

capture and transport efficiency	=	mass of VOC delivered to the incinerator inlet/time	÷	mass of VOC delivered to the substrate/time

-All fugitive VOC emissions are to be accounted for: clean-up solvents, make-up solvents (solvents used to maintain ink viscosity), and solvent spillage make up the majority of the fugitive VOC emissions.
-Final test results for review and comment shall be filed with the Department (Southeast Florida District and BAQM), DERM (Dade County Environmental Resources Management), and Region IV USEPA, as soon as practical, but no later than 45 days after the last sampling run of each test is completed.

3. The source is subject to FAC Rule 17-2.620(1)(C), and some in-house preventive maintenance procedures will be required, but not limited to:

° maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
° where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
° all fittings, valves, lines, etc., shall be properly maintained;
° prevent excessive turbulence across any exposed VOC;
° all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
° maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

4. Objectionable odors shall not be allowed on off-plant property, pursuant to FAC Rule 17-2.620(2).

PERMITTEE:
Arnold Cellophane Corporation

Permit Number AC 13-79884
Expiration Date: September 1, 1985

SPECIFIC CONDITIONS:

5. The source is subject to FAC Rule 17-2.240, which states that no person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. Therefore, an electrical interlock shall be installed such that P-5 is prevented from operating without its associated vapor control system.

6. The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and DERM. File all written reports with the same offices.

7. Whenever this source is being operated with other graphic arts system units (designated P-1, P-2, P-3, and P-4), the catalytic incinerator shall be required to meet the emission standard established through the determination of LAER, which is "95% total destruction of the VOC delivered to the inlet of the catalytic incinerator". A compliance test to verify the destruction efficiency shall be required by the expiration date of this permit and prior to obtaining an operating permit.

8. Proposed operation is 24-hours per day, 5 days per week, and 50 weeks per year.

9. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER's Southeast Florida District and DERM. Full operation of the source may then be conducted in compliance with the terms of this permit until expiration of this permit or receipt of an operating permit.

Issued this_____day of_____, 19 __.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

Determination of
LAER

Lowest Achievable Emission Rate (LAER) Determination
Arnold Cellophane Corporation
Dade County

The applicant has installed a flexographic press at their facility located in Miami, Florida. The unit, designated as No. P-5, is used primarily with oriented polypropylene film substrates and is scheduled to operate a twenty-four hour day, five days a week.

The flexographic printing process uses a rubber image carrier located above the surface of the plate, is usually web fed, and runs on a variety of substrates. Basically, the process is the application of an alcohol based ink to the surface of a moving web or film, then rapid solvent evaporation using heated air. The solvent laden air is currently exhausted from the system directly into the atmosphere.

The solvent vapors are defined as volatile organic compounds (VOC's) and when discharged to the atmosphere contribute significantly to air pollution, which may reasonably be anticipated to endanger public health or welfare. VOC emissions are most significant as air pollutants in their role of photochemical oxidant precursors.

The dryer is the major source of VOC emissions with a lesser amount emitted at the ink fountain, the press, and the chill rolls. Vapor capture systems are necessary to minimize VOC vapor loss around the ink fountain and at the chill rolls. VOC emissions can also be reduced by using low solvent technology inks, if compatible with the planned line substrate.

The Arnold Cellophane plant is located in Dade County, which is classified nonattainment for the pollutant ozone, Rule 17-2.410. The additional press will result in ozone (VOC) emissions that will exceed the 40 ton per year significant emission rate by approximately 30 tons per year, Table 500-2 Regulated Air Pollutants - Significant Emission Rates.

This is a modification to a major facility, thus subject to the provisions of Rule 17-2.510(2)(d)4.a. The application and employment of Lowest Achievable Emission Rate (LAER) is a preconstruction review requirement (Rule 17-2.510(4)(a)). The procedure for determining LAER is set forth in Rule 17-2.640.

LAER Determination Requested by the Applicant:

Enclosures and ducts will be installed to capture 70 percent of the VOC vapors emitted at the press. The vapors will be conveyed to a new catalytic incinerator designed to convert 95 percent of the VOC's to innocuous CO_2 and water by rapid oxidation.

Date of Receipt of a LAER application:

October 25, 1984

Review Group Members:

This determination was based upon comments received from the New Source Review Section, the Southeast Florida District, Dade County Department of Environmental Resources Management, and USEPA-Region IV.

LAER Determined by DER:

Pollutant	Emission Limit
Ozone (VOC)	70 percent capture efficiency of the VOC vapors emitted at the press and 95 percent destruction of the collected vapors by the catalytic incinerator

LAER Determination Rationale:

In flexographic printing from stationary sources, volatile organic compounds (VOC's) can be released to the atmosphere by evaporation from the inking, cleaning, and curing operations. Hydrocarbons comprise a class of VOC's containing only carbon and hydrogen in various combinations. Most of these compounds and their by-products are considered poisonous, but most are harmful only in very high concentrations. Hydrocarbons can react with other chemicals, notably in the photochemical reaction, which results in the oxidants commonly called smog.

To control VOC emissions the applicant first considered using waterborne inks instead of organic solvent inks. They experimented with waterborne inks but concluded that, even though promising, waterborne inks are not yet well enought developed for their printing requirements. Only add-on control devices remain for consideration.

The three most popular types of add-on devices are those for thermal and catalytic incineration and carbon absorption. The applicant will use a catalytic incinerator to reduce by 95% the amount of VOC's discharged to the atmosphere when No. P-5 is operating. The add-on unit will be a ComCat catalytic incinerator manufactured by Pillar Corporation. The applicant will install the necessary enclosures and ducting at No. P-5 to capture 70 percent of the vapors generated. The VOC destruction efficiency of the catalytic incinerator will be 95%. The planned incinerator and press ducting modifications will result in 136 less tons of VOC's discharged into the atmosphere per year.

The Department, when preparing a Lowest Achievable Emission Rate (LAER) determination, shall give consideration to and make a determination that reflects: 1) any information published by the USEPA including the BACT/LAER Clearinghouse, 2) the most strigent emission limitation which is contained in the implementation plan of any State, 3) the most stringent emission limitation which is achieved in practice, and 4) all scientific, engineering, technical material, or other relevant information available to the department.

The latest (May 1984) BACT/LAER Clearinghouse summary lists data for eight facilities in the graphic arts category, half of which are rotogravure systems. Most of the efficiencies reported were based on a stack test for the control device and did not include the capture efficiency of the vapors generated at the emission point. At one of the listed facilities a material balance around the control device and vapor collection system was done. The control device efficiency was 95% and the capture efficiency was 73%. This facility did not have to meet LAER.

The literature research indicates that a 95% efficiency of a catalytic incinerator and a vapor system capture efficiency between 70-73 percent are the most stringent limits that meet the LAER requirement as set forth in Rule 17-2.510(4)(b). The department agrees that the VOC emission limit for No. P-5, as proposed by the applicant, is LAER.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

C. H. Fancy, Deputy Chief, BAQM

Date

Approved by:

Victoria J. Tschinkel, Secretary

Date

ATTACHMENT 1

ATTACHMENT 1

Available Upon Request.

ATTACHMENT 2

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

December 16, 1983

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
Tallahassee, Florida 32301-8241

DER
DEC 19 1983
BAQM

Dear Mr. Fancy:

I am enclosing an application for modification of our construction permit, AC 13-55914, on our flexographic press, P-5. A check for the $100.00 fee was sent to the West Palm Beach office by mistake and will be forwarded to you by Mr. Tom Tittle.

We request an LAER determination be made because of new information we have received from the EPA. My calculation, based on this new information, will increase our reportable emissions to over 40 tons. We will be unable to complete construction by the December 31, 1983 deadline on the permit because of the EPA directive.

If this application or modification to the permit does not automatically extend the December 31st date, please consider this letter a request for an extension until such time that the LAER determination has been made and we have an opportunity to review and develop an implementation plan based on that determination.

Sincerely,

Kenneth H. Speckhals

KHS:mrs
Encl.

cc: Mr. Pat Wong, DERM
Mr. Tom Tittle, DER, West Palm Beach
Mr. M. Ambrose
Mr. Jay Landers

AC 13 - 79884

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
3301 GUN CLUB ROAD
P.O. BOX 3858
WEST PALM BEACH, FLORIDA 33402

DER
DEC 19 1983
BAQM

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ROY DUKE
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: *FLEXOGRAPHIC PRINTING PRESS* [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: *ARNOLD CELLOPHANE CORPORATION* COUNTY: *DADE*

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) *P-5 (formerly P-6)*

SOURCE LOCATION: Street *20400 S.W. 112 Avenue* City *Miami*

UTM: East *17:563.2KmE* North *2828.6 KmN*

Latitude ___ ° ___ ' ___ "N Longitude ___ ° ___ ' ___ "W

APPLICANT NAME AND TITLE: *Peter E. Coots, Chief Executive Officer*

APPLICANT ADDRESS: *Arnold Cellophane Corporation, 20400 S.W. 112 Ave., Miami, Fl. 33157*

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of *Arnold Cellophane Corpor*

I certify that the statements made in this application for *an air pollution source* permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: *Peter E. Coots*

Peter E. Coots, Chief Executive Officer
Name and Title (Please Type)

Date: *11/23/83* Telephone No. *305-238-5961*

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed D.M. Ambrose

D.M. Ambrose, P.E.
Name (Please Type)

D.M. Ambrose Associates, Inc.
Company Name (Please Type)

6190 No. Federal Highway, Boca Raton, Fl. 33431
Mailing Address (Please Type)

Florida Registration No. 12831 Date: _____ Telephone No. 305-997-6790

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See attached letter of explanation

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction N/A Completion of Construction _____

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Cost will be determined based on LAER determination requested in this permit

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

February 28, 1983

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 5 ; wks/yr 52 ;

if power plant, hrs/yr no ; if seasonal, describe: not seasonal

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? yes

   a. If yes, has "offset" been applied? no

   b. If yes, has "Lowest Achievable Emission Rate" been applied? no

   c. If yes, list non-attainment pollutants. ozone

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII.

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? no

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? no

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? yes

   a. If yes, for what pollutants? V.O.C.

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
FLEXOGRAPHIC PRINTING INKS	V.O.C.	SEE DISCUSSION ATTACHED P-5		(SEE DIAGRAM)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
V.O.C.	SEE DISCUSSION				300 LBS/HR	200	P-5

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural gas	*.00021*	*0.00200*	*2.0 MM*

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Waste ink and dirty washup solvent recycled by distillation for reuse as washup.

All hazardous waste dispose of in EPA approved waste site by EPA licensed contractors.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: *Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.*

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [X] No *Not to our knowledge*

Contaminant	Rate or Concentration
V.O.C.	*Add-on-Control and capture system to achieve*
	65% reduction of all V.O.C. used

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System: *Low solvent*
2. Operating Principles: *Low solvent*
3. Efficiency:* *EPA-450/3-79-024, April 1979*
4. Capital Costs: *Unknown*

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^{2}* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

ATTACHMENT TO PERMIT APPLICATION

SECTION II: A

We request an LAER determination be made on our construction permit #AC 13-55914 so that we may determine what course of pollution control technology will economically achieve full compliance for our 6 color flexographic press.

In our application we stated that we intended to achieve compliance using low solvent technology inks for Graphic Arts systems. The flexo press was designed and built with the best available technology with implementation of LST in mind. We were uncertain that LST would work for our specialized application since it was new techology. We were, however, strongly encouraged by inks and film manufacturers. Our direct competitors almost universally were planning to use low solvent technology on both RACT and LAER equipment.

In our first application we estimated emissions of 30.3 tons for LST. This figure was based on an historical usage of dry pounds of ink used on our other presses in a year.

The evaporative loss of V.O.C. which occurs all the time that the ink is in the recirculation system was not included in our 30.3 ton estimate because the regulation implied only the V.O.C. content "as applied" is regulated by the LST rules. The evaporative losses or "make up solvent" may be a substantial portion of the total V.O.C. emission, which could increase our reportable emission to over 40 tons.

In a reeent communication from the EPA Region IV, we were advised that make-up solvent must be included in LST equations. As of this writing, we have not been told how to do this and what means we are to use to verify compliance. The EPA communication is attached.

During the past year we have been implementing LST inks for the press. The recent ruling by the EPA has set back our implementation plan. Aside from the ruling, we have not been able to achieve 100% LST ink usage on P-5 for the following reasons:

continued....

ATTACHMENT TO PERMIT APPLICATION

Page 2

continued:

1) Not all colors are available in LST formulations. This problem thereby requires us to average V.O.C. content of the inks as they are being applied. We estimated that the average V.O.C. content of the inks could be less than 40% volume on most (but not all) jobs and therefore it is feasbile to achieve compliance if V.O.C. content averaging is allowed. In order to practically use the press, we would also need to average jobs over at least a minimum of seven days or more.

2) The amount of "make-up" solvent needed for any job is not predictable since evaporative losses occur whether the press is running or not. Flexographic printing is typically a start/stop/change operation. While it is feasible to account for make-up solvent usage daily, the record keeping and tabulation costs would be extensive and unjustifiable. Weekly accounting would be more realistic and in keeping with our present accounting practices. Even if we have accurate records of V.O.C. emission, our ability to plan and control would not be improved if compliance is based solely on % volume V.O.C. content "as applied plus make-up solvent."

3) While we can make substantial reductions in emission using (3) types of LST white ink and (5) or (6) available colors, there still exists a number of low lbs./day emission jobs we would like to run on P-5, which would not be in compliance based on % volume V.O.C. calculations. No single type of ink will do all jobs. We use at least (6) different ink types and over (140) colors to print (10) different film substrates with over (450) different designs annually. We ran about (1800) jobs on (4) presses in the past (12) months. We would like to be able to run on P-5 the full spectrum of jobs because of the exceptional print quality we can achieve. If we are limited to LST jobs on P-5, this becomes an unnecessary hardship. In fact, V.O.C. emissions level does not change because we still have to run the non-compliance job on one of the other (4) RACT standard presses where we can average over more jobs.

We propose as LAER the annual V.O.C. emmission be no greater than those achievable by an add-on-control and effective capture system. In EPA publication EPA-450/3-79-014, "Guidance for Lowest Achievable Emission Rates from 18 Major Stationary Sources of Particulate, Nitrogen Oxides, Sulfur Dioxide or Volatile Organic Compounds," LEAR is proposed as a 65% V.O.C. reduction of V.O.C. emissions using an add-on-control and effective capture system, as discussed on Page 3.13-10. We propose that we can achieve an equivalent or better annual rate using low solvent inks and better recirculation and containment to reduce make up solvent or evaporative losses. The basis for control would be an average V.O.C. content of 1.07 lbs. total V.O.C. emitted per pound of inks applied, which would be verified annually via usage record keeping on a weekly calculation. Compliance would be determined by a four week moving

continued...

continued...

average. We need the moving average to allow us time to correct or compensate for unexpected variation in our control plan.

We arrvied at the 1.07 lbs. of V.O.C. emitted per pound of ink solids applied, based on 1982 ink usage where we emitted 3.07 lbs. V.O.C. per pound of ink solids applied. A 65% reduction is calculated as follows:

$$3.07 * (1 - .65) = 1.07$$

All records would be verifiable by inspection and audit of ink and solvent purchases, as well as our daily record keeping.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
P.O. Box 570370
Miami, Florida 33157

RECEIVED
NOV 2 1983
AIR & WASTE MGMT.
COMPLIANCE

REF: Compliance procedures for Arnold Cellophane

Dear Mr. Speckhals:

This is a follow-up to the guidance Mr. Douglas Cook gave you at your October 4, 1983 meeting. You questioned the appropriateness of including make-up solvent in compliance calculations for graphic art inks. He stated that make-up solvents should be included and, as you requested, has confirmed that guidance with headquarters. We are enclosing the confirmation memorandum for your use.

On a related matter, Mr. Cook has not completed the detailed example compliance calculations for your facility but we hope to have those calculations to you shortly. If you would like to discuss this matter, please contact Mr. Cook at (404) 881-7654.

Sincerely yours,

Richard L. Dutton acting for

James T. Wilburn, Chief
Air Management Branch
Air & Waste Management Division

cc: Steve Smallwood P.E. DPPR w/attachments
Anthony J. Clements, P.E. DEPM w/attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

21 OCT 1983

MEMORANDUM

SUBJECT: Addition of Dilution Solvents to Printing Inks

FROM: James C. Berry, Chief
Chemical Applications Section, CPB (MD-13)

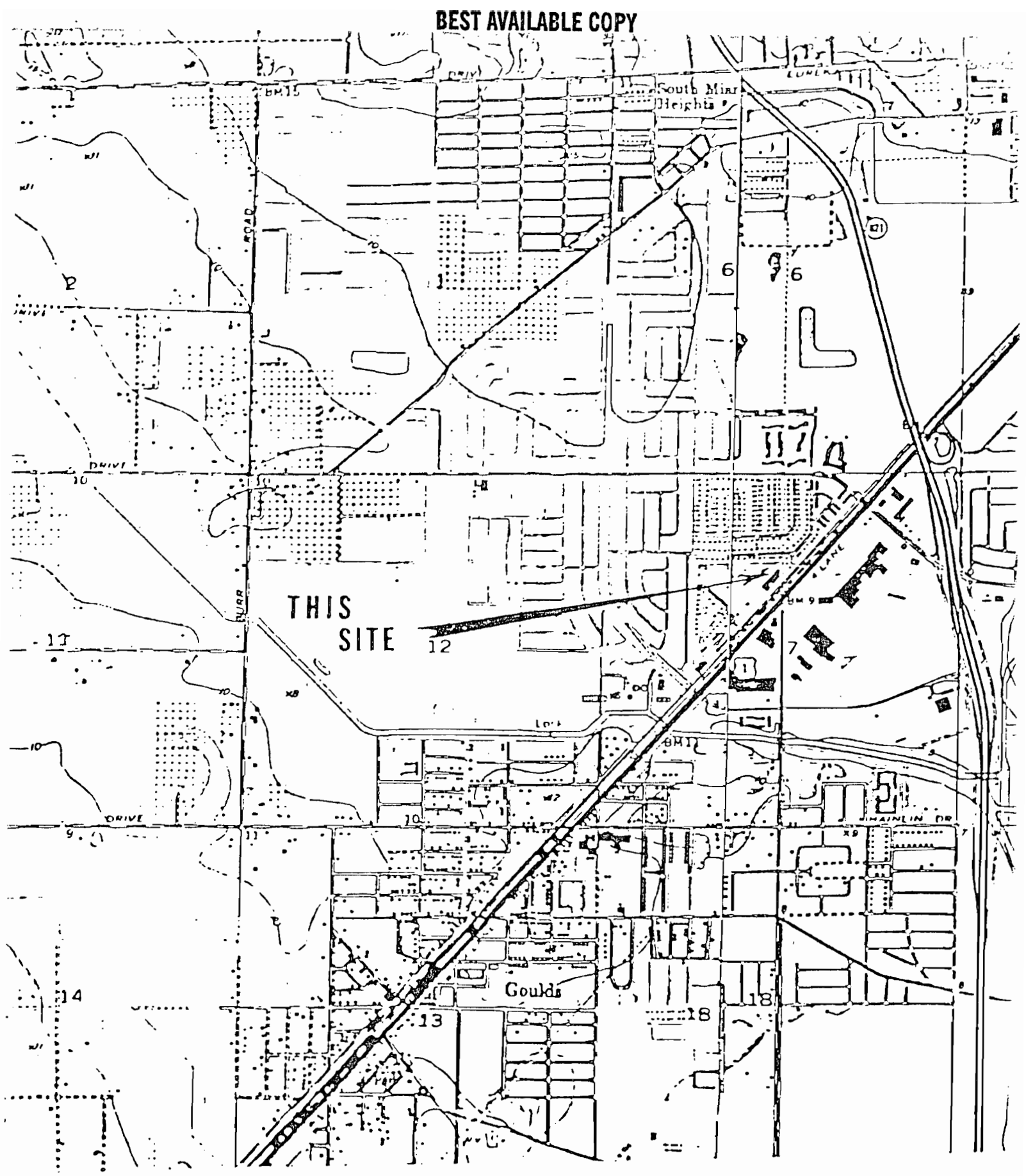
G. T. Helms, Chief
Control Programs Operations Branch, CPDD (MD-15)

TO: Doug Cook
Air Programs Branch, Region IV

This will confirm the guidance Dennis Crumpler gave to you by phone on October 13, 1983, regarding the addition of dilution solvents to printing inks. It is our position that all nonexempt solvents added to printing inks must be included in VOC reduction requirement calculations. Included are solvents added to the ink prior to its being pumped to the ink fountain and those added at the press to compensate for evaporative losses during the printing operation.

If you have additional questions please let me know. My telephone number is FTS 629-5605.

cc: Jack Farmer, ESED/CD
Brock Nicholson, CPDD
Susan Wyatt, ESED



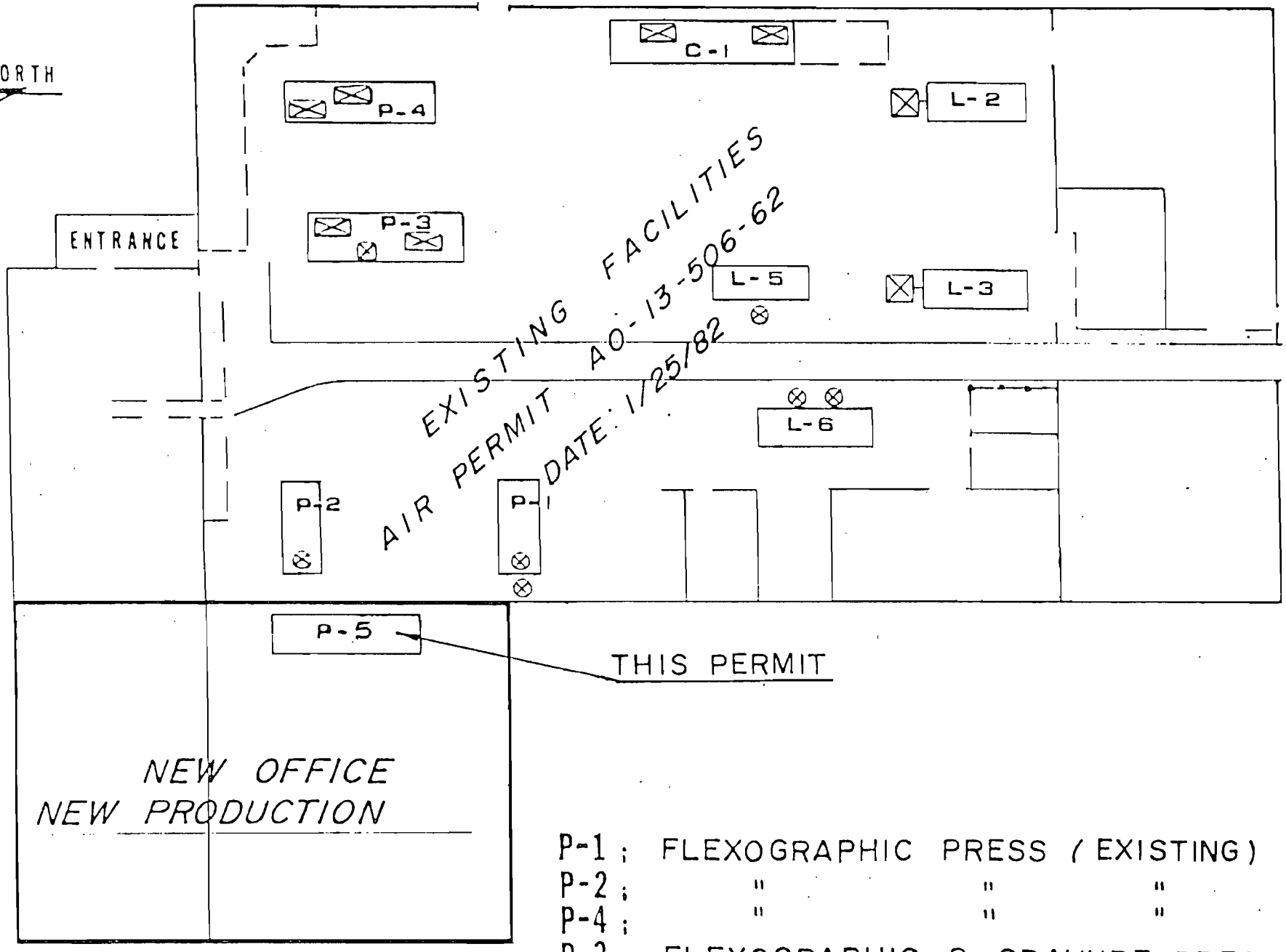
ARNOLD CELLOPHANE

DADE COUNTY FLORIDA

VICINITY MAP

DE COUNTY FLORIDA

EQUIPMENT ARRANGEMENT SKETCH



P-1 ; FLEXOGRAPHIC PRESS (EXISTING)
P-2 ; " " "
P-4 ; " " "
P-3 ; FLEXOGRAPHIC & GRAVURE PRESS (EXISTIN

2 ; TWO COATING HEAD ADHESIVE LAMINATOR, (SAME FOR L-3, L-5, L-6) "
1 ; TWO STATION PVDC COATER (EXISTING)
5 ; FLEXOGRAPHIC PRESS (NEW)

ATTACHMENT 3

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

DER
AIR
BAQM

TO: Clair Fancy, BAQM

FROM: I. Goldman / Tom Tittle / John Guidry, SEFD

DATE: January 9, 1984

RE: Comments on Application for Modification of Construction Permit #AC-13-55914. - Flexographic Press P-5 - Arnold Cellophane Corporation

Since the increase of Volatile Organic Compounds (VOC) emissions from this source is estimated at greater that the significant rate of 40 T/yr., (Table 500 - 2 in Chapter 17-2) Lowest Achievable Emission Rate (LAER) is applicable.

The control technologies presently available are:

a) Lower Solvents/Higher Solids
b) Incinerator
c) Absorption/Adsorption/Condensation
d) Housekeeping Procedures

The applicant would have to select from technologies a) to c) that which emitted the minimum amount of VOC. Regardless of which technology the applicant chooses, the permit should also address item d) under the general VOC Rule 17-2.620(1)(a).

EPA has indicated in letters from James Wilburn and Berry/Helms (submitted with Arnold Cellophane's request for modification of their construction permit AC-13-55914 dated December 16, 1983) that "make-up" solvent should be included in the VOC calculations showing compliance with Reasonable Available Control Technology (RACT) regulations. We feel that this was not the intent of the RACT regulation and "make-up" could be addressed under the general VOC rule cited above.

To support this view, 40 CFR 60 Subpart QQ for Publication Rotogravure, while not directly applicable to this source, does not consider make up solvents toward compliance. Why the distinction?

It is also suggested that the Best Available Technology (BACT) portion of the application form be used to describe each control technology (items a) through c)) in order to determine the LAER, and that estimates of total VOC emissions (including calculations) be shown in the application.

IG:TT:JG:lp

ATTACHMENT 4

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB VICTORIA

January 16, 1984

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Post Office Box 570370
Miami, Florida 33157

Dear Mr. Speckhals:

The bureau is in receipt of your letter dated December 16, 1983, in which you requested an extension of the expiration date of your construction permit, No. AC 13-55914. The bureau is in agreement with the request and the following shall be added or changed:

Expiration Date:

From: December 31, 1983
To: June 30, 1984

Attachment to be incorporated:

5. Mr. Kenneth H. Speckhals' letter dated December 16, 1983.

This letter and attachment shall be attached to your construction permit, No. AC 13-55914, and shall become a part of that permit.

Sincerely,

Victoria J. Tschinkel

Victoria J. Tschinkel
Secretary

VJT/s
attachment

cc: Nancy Wright
Pat Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 5

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

December 16, 1983

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
Tallahassee, Florida 32301-8241

DER
DEC 19 1983
BAQM

Dear Mr. Fancy:

I am enclosing an application for modification of our construction permit, AC 13-55914, on our flexographic press, P-5. A check for the $100.00 fee was sent to the West Palm Beach office by mistake and will be forwarded to you by Mr. Tom Tittle.

We request an LAER determination be made because of new information we have received from the EPA. My calculation, based on this new information, will increase our reportable emissions to over 40 tons. We will be unable to complete construction by the December 31, 1983 deadline on the permit because of the EPA directive.

If this application or modification to the permit does not automatically extend the December 31st date, please consider this letter a request for an extension until such time that the LAER determination has been made and we have an opportunity to review and develop an implementation plan based on that determination.

Sincerely,

Kenneth H. Speckhals

KHS:mrs
Encl.

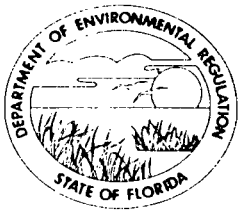
cc: Mr. Pat Wong, DERM
Mr. Tom Tittle, DER, West Palm Beach
Mr. M. Ambrose
Mr. Jay Landers

ATTACHMENT 5

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 17, 1984

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Re: Completeness Review for the Application to Modify an Air Pollution Construction Permit: AC 13-55914

Dear Mr. Speckhals:

The bureau is in receipt of your letter and attachment dated December 16, 1983, in which you requested a modification to the above referenced construction permit. The application has been deemed incomplete and the following information, including all calculations and assumptions, shall be submitted before further processing of your request will resume:

1. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

2. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each ink (as delivered) and the amounts used (rounded to the nearest gallon), including their densities and the percent by weight of the solids, the solvent (separate if more than one), the water, and any other constituent(s).

3. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used as a make-up solvent, including the total amounts used (rounded to the nearest gallon), their densities, and the amounts recycled/reclaimed per each solvent.

4. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used for cleaning purposes only, including the amounts used (rounded to the nearest gallon) and their densities.

5. Submit, on an annual basis and for the last 5 years (1979-83), a listing of any volatile organic compounds (VOC) per type not covered in # 2, 3, and 4 above, including the amounts used (rounded to the nearest gallon), their densities, and any amounts reclaimed/recycled per each solvent.

6. Submit, on an annual basis and for the last 5 years (1979-83), the amount of hazardous waste (rounded to the nearest gallon) and the percent of VOC that has been sent to an approved hazardous waste landfill. What is your RCRA number?

7. If the flexographic press P-6 (now P-5) has used any VOC and inks to date, separate from the above requested data and list here, including the pertinent information requested.

8. If there is any proprietary information required in any response(s) to the above questions, please identify and submit as a separate document and the bureau will maintain confidentiality.

9. List the vendor(s) used for recycling/reclaiming solvents, inks, and hazardous wastes, including their addresses and phone numbers.

10. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of pressure sensitive tape and label materials?

11. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of pressure sensitive tape and label materials?

12. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of:

a) Catalogues, including mail order and premium,

b) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

c) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

d) Magazines,

e) Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

f) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

g) Periodicals, and

h) Telephone and other directories, including business reference services?

13. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of the items listed in question #12?

14. What do you propose as the add-on-control device(s) for the removal of the volatile organic compounds emitted from the flexographic press P-6 (now P-5)?

Sincerely,

E. H. Palagye

For C. H. Fancy, P.E.
Deputy Bureau Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: Nancy Wright
Patrick Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 6

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

January 30, 1984

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
2600 Blairstone Road
Tallahassee, Fl. 32301-8241

Dear Mr. Fancy:

RE: COMPLETENESS REVIEW FOR APPLICATION TO MODIFY AIR POLLUTION CONSTRUCTION PERMIT AC 13-55914

In reply to your letter of January 17th, we have been investigating the installation of a catalytic incinerator which includes not only P-5, but our other flexographic presses as well. We are abandoning any further effort to develop low solvent technology as a means of compliance for flexographic printing.

At the present, we have committed to purchase a Pillar incinerator system that will meet all state and federal regulations for add-on-controls. A copy of the brochure is enclosed. This system represents a technological breakthrough because of its low purchase/installation cost. In addition to reducing V.O.C. emissions, we plan to recover heat, thereby reducing natural gas consumption.

We plan to submit a new application for construction as soon as the engineering study is complete. The details should be available by February 17th. The application would include all of our presses, not only P-5.

We are not planning to install incineration on our laminators at this time because we believe we achieve a more economical compliance by using low solvent materials.

Sincerely,

Kenneth H. Speckhals

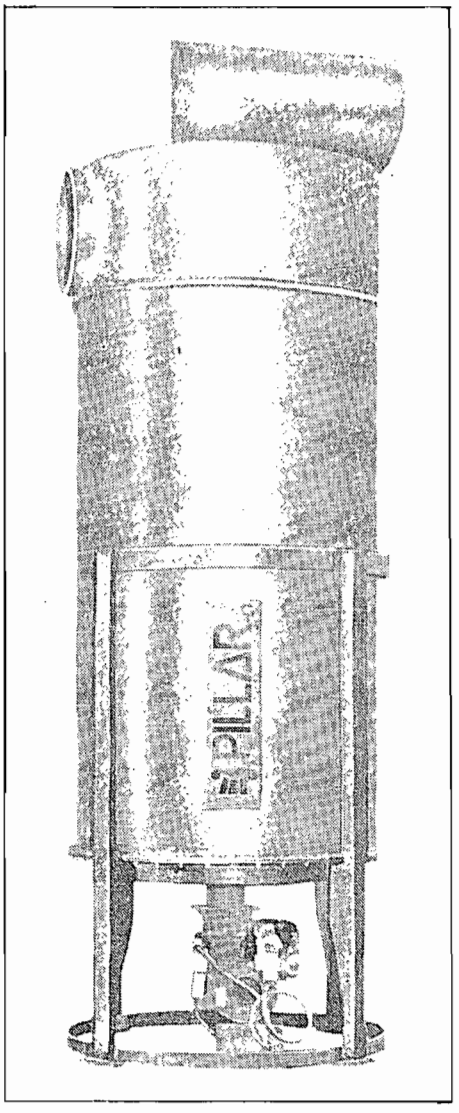
Kenneth H. Speckhals
Technical Manager

KHS:mrs
Encl.

cc: J. Landers; Nancy Wright (DER); Patrick Wong (DERM); Tom Tittle (DER); D.M. Ambrose

BULLETIN MS# 125

PILLAR



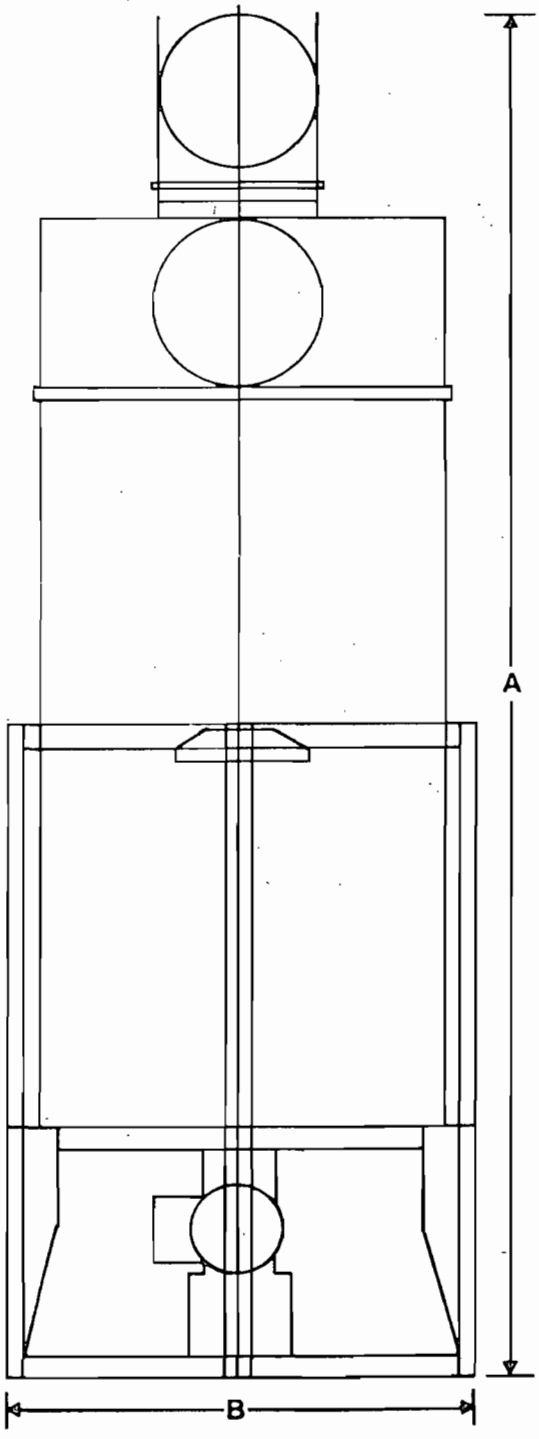
ComCat™
Catalytic Incinerator

ELIMINATE SOLVENT EMISSIONS AND SAVE ENERGY COSTS WITH THE PILLAR CATALYTIC INCINERATOR

Pillar Corporation introduces a new catalytic incinerator using a patented homogeneous catalyst at a fraction of the cost of noble metal catalysts or thermal oxidizers. Exothermic heat generated in the reactor can be returned to the plant for a rapid return on investment in energy savings.

The proprietary catalyst material is in the form of hard elongated pellets. Unlike competitive catalysts which consist of a thin coating of material on a ceramic or stainless steel base, the Pillar catalyst is 100% active material throughout. The pellets lend themselves to placement in an annular bed which greatly reduces reactor size and pressure drop.

With the Pillar catalytic reactor you can continue to do high quality printing and laminating with solvent based printing inks and adhesives and save money in the process.



MODELS AVAILABLE

SERIES	ENGLISH	METRIC
Series 45	4500 SCFM	126 m^3/min.
Series 65	6500 SCFM	186 m^3/min.
Series 100	10,000 SCFM	282 m^3/min.
Series 150	15,000 SCFM	426 m^3/min.
Series 200	20,000 SCFM	564 m^3/min.

SPECIFICATIONS

SERIES	Dimension A English/Metric		Dimension B English/Metric	
Series 45	132"	3353 mm	48"	1219 mm
Series 65	132"	3353 mm	60"	1524 mm
Series 100	132"	3353 mm	72"	1829 mm
Series 150	132"	3353 mm	84"	2134 mm
Series 200	132"	3353 mm	96"	2438 mm

ComCat™
Catalytic Incinerator

TECHNICAL FEATURES

* Catalyst Type — Homogeneous Metal Oxide
Catalyst Reaction Temperature — 400°F (204°C)
Solvent Range — 20 to 400 lbs./hr. (9.1 to 181 kgs./hr.)
Construction — ¼" (6.4 mm) Steel Plate
Inlet Temperature Range — Ambient to 400°F (204°C)
Outlet Temperature Range — 500°F to 800°F (260°C to 427°C)
External Surface Temperature — 160°F (71°C)
Heat Exchanger — Built-in Preheat Exchanger
Efficiency — 98% conversion (typical)
Life Expectancy — Five Years
Mounting — Free Standing, Indoor or Outdoor

* patented

Due to continued development, all designs and specifications are subject to change without notice.

Pillar has built an international sales/service network to speed response time. Regionally throughout North America. In principal cities around the world.

PILLAR POWER:
Responsive people building reliable systems.

PILLAR CORPORATION
Advanced Products Division
7000 West Walker Street
Milwaukee, Wisconsin 53214 USA
Phone: 414-475-7722

PILLAR ASIA LIMITED
Hong Kong

PILLAR (ORIENT) CORPORATION
Tokyo, Japan

PILLAR MEXICANA S.A. de C.V.
Mexico City, Mexico

PILLAR do BRASIL
Sao Paulo, Brasil

PILLAR EUROPE
High Wycombe, England

ATTACHMENT 7

d. m. ambrose associates, inc.
consulting engineers – land surveyors

May 8, 1984

Mr. Clair Fancy
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL. 32301-8241

Re: ARNOLD CELLOPHANE CORPORATION

Dear Mr. Fancy:

Please find enclosed copies of completed application forms and a check in the amount of $100.00 for the application fee.

If you have any further question, please contact this office.

Very truly yours,
D.M. AMBROSE ASSOCIATES, INC.

D.M. Ambrose, P.E.

Encl.

cc.: Mr. Tom Tittle, DER Palm Beach, without fee
Mr. Patrick Wong, DERM, without fee

DMA/n.

6190 North Federal Highway, Boca Raton, Florida 33431 (305) 997-6790
West Palm Beach 655-6151, Broward 462-2860

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

MAY 10 1984

BAQM

SOUTHEAST FLORIDA DISTRICT
3301 GUN CLUB ROAD
P.O. BOX 3858
WEST PALM BEACH, FLORIDA 33402

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Flexographic Printing Presses [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: Arnold Cellophane Corporation COUNTY: Dade

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) _____

SOURCE LOCATION: Street 20400 S.W. 112th Avenue City Miami

UTM: East 17:563.2 KME North 2828.6 KM N.

Latitude ____° ____' ____"N Longitude ____° ____' ____"W

APPLICANT NAME AND TITLE: Peter E. Coots, Chief Executive Officer

APPLICANT ADDRESS: Arnold CEllophane Corp, 20400 SW 112 Ave, Miami, Florida 33157

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Arnold lEllophane Corp

I certify that the statements made in this application for a air pollution source permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: _____

Peter E. Coots, Chief Exec. Officer
Name and Title (Please Type)

Date: 4/26/84 Telephone No. 305-238-5961

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed _____

D.M. Ambrose, PE
Name (Please Type)

D.M. Ambrose Associates
Company Name (Please Type)

6190 N. Federal Highway
Boca Raton, Florida 33431
Mailing Address (Please Type)

Florida Registration No. 12831 Date: _____ Telephone No. (305) 997-6790

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See attached description and specification from Pillar Corp. and subcontractor to Pillar - Anquil Energy Systems for details and specifications.

Control system will reduce VOC emissions delivered to it by 95% or more but will not reduce total emissions of all presses by 90%.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction June 29, 1984 Completion of Construction July 31, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Total pollution control and air handling system with heat recovery to be installed by vendor at $155,000.00. Auxiliary equipment to interconnect electrical and mechanical to presses at $5,000. Total-$160,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AO 13-50662, December 31, 1982, for presses 1,2,3,4

AC 13-55914, June 30, 1984, for press 5, construction permit

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 5 ; wks/yr 52 ;

if power plant, hrs/yr N/A; if seasonal, describe: Not seasonal.

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. Ozone

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Yes

   a. If yes, for what pollutants? VOC

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

The add-on control system planned for these four presses will reduce VOC to carbon dioxide with a better than 90% conversion rate as measured by EPA method 25 of all VOC delivered. This meets or exceeds requirements for BACT and RACT published by EPA for the operation of an add-on control.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Flexographic Ink	VOC	53.9	176.3	See attached
Solvent	VOC	100.00	157.3	Press lay-out

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets aa necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
VOC	187 *	280.5	N/A	93.5	561,000	280.5	Attached
* estimate at two times allowable for any one hour in a 24 hour period.							
Note the VOC emissions are constantly changing due to whether presses are running; being changed over to the next job; or down for mechanical reasons.							

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: .(See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Pillar Corporation "Comcat" 20,000 SCFM	Estimated Capture 70% or more	90% or more	N/A	Vendor specification

E. Fuels

Type (Be Specific)	Consumption* avg/hr	Consumption* max./hr	Maximum Heat Input (MMBTU/hr)
Natural Gas (system)	Net 0	Net 0	Net 0
	system is designed to recover heat by catalytic		
	conversion of	VOC emissions.	We expect to reduce
	natural gas consumption on all presses by 80% including natural gas used to operate control device.		

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: .11 lbs per MMCF Percent Ash: 0

Density: $0^{o}C/1$ atm = .00671 lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: 1025 BTU/lb 140.4 Btus/gal BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

This system will not generate any liquid or solid waste.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: N/A ft. Stack Diameter: N/A ft.

Gas Flow Rate: N/A ACFM _____ DSCFM Gas Exit Temperature: 300-400 °F.

Water Vapor Content: variable % Velocity: variable FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emisaions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ARNOLD CELLOPHANE CORPORATION

ATTACHMENT FOR SECTION II,A.

In summary, this modification is for add-on-control system for flexographic presses P1, P3, P4, and P5. Pillar Corporation and their subcontractor, Anquil Energy Systems have provided the attached a description of the equipment and schematics.

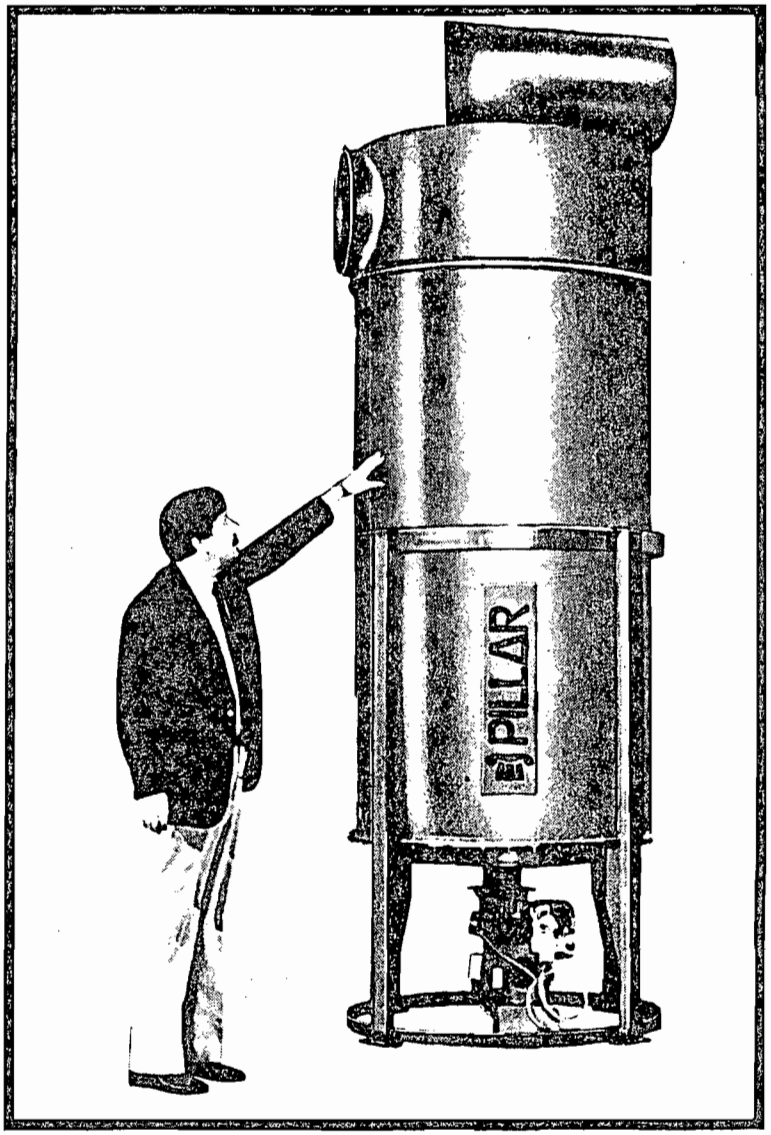
This system will reduce VOC emissions delivered to it by greater than 90%. It will not reduce total emissions from the presses by 90% because we are unable to capture or deliver more than 65% from presses 1,3, and 4 which are RACT standard and 70% from press 5 which is BACT standard. These estimated captures are based on EPA publications, EPA-450/2-78-033 and EPA-450/3-79-024. We do not know of any method to measure captured efficiency. In fact, we doubt that such a number could be reliably measured, calculated or estimated because of the dynamics and variability in the operation of our presses.

This system is the first add-on-control catalytic incineration unit with heat recovery for multiple flexographic presses.

The design and installation is a cooperative developmental effort between ourselves and Pillar Corporation. We plan to share operating data with our industry.

We believe that the project will satisfy the requirement of the Clean Air Amendments of 1977, and all Federal regulations for the reduction of VOC emissions using add-on-control of flexographic printing presses (Graphic Arts Systems).

PILLAR



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PILLAR CORPORATION
7000 West Walker Street
Milwaukee, Wisconsin 53214
Phone: (414) 475-7722
Telex: 201310 PLAR UR
Cable: PILLAR MILW

ELIMINATE SOLVENT EMISSIONS AND SAVE ENERGY COSTS WITH THE PILLAR CATALYTIC INCINERATOR

Pillar Corporation introduces a new catalytic incinerator using a patented homogeneous catalyst at a fraction of the cost of noble metal catalysts or thermal oxidizers. Exothermic heat generated in the reactor can be returned to the plant for a rapid return on investment in energy savings.

The proprietary catalyst material is in the form of a hard elongated pellet. Unlike competitive catalyst which consists of a thin coating of material on a ceramic or stainless steel base, the Pillar catalyst is 100% active material throughout. The pellets lend themselves to placement in an annular bed which greatly reduces reactor size and pressure drop.

With the Pillar catalytic reactor you can continue to do high quality printing and laminating with solvent based printing inks and adhesives and save money in the process.

February 7, 1984

Mr. Kenneth Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 S.W. 112th Street
Miami, FL 33157

Subject: Pillar Catalytic Converter With Heat Recovery

Dear Mr. Speckhals,

As a result of our meeting of February 1, 1984, we are pleased to submit our proposal to supply and install a Pillar Catalytic Converter to oxidize the exhaust from four of your presses and to return the energy back in the form of preheated air to the process.

PILLAR CORPORATION
7000 West Walker Street
Milwaukee, WI 53214
(414) 475-7722

Telex: 201310 PLAR UR
Cable: PILLAR MILW.

PILLAR ASIA LIMITED
Hong Kong

PILLAR (ORIENT) CORPORATION
Tokyo, Japan

PILLAR MEXICANA S.A. de C.V.
Mexico City, Mexico

PILLAR do BRASIL
Sao Paulo, Brasil

PILLAR EUROPE
High Wycombe, England

System Description

The exhaust output of presses #1, #4 and #5, and the hot stacks of press #3, have been measured to be a total of 30,484 ACFM. The Pillar Catalytic Converter is designed to handle 20,000 SCFM. Since it is estimated that 50% of the presses are on at any one time, it is seen that on the average, the Catalytic Converter will incinerate the total volume of exhaust.

The system will be designed so that each of the presses will have a dedicated high pressure blower which is interlocked with the present exhaust fan of that particular fan. The output of the high pressure blower is then supplied to the inlet of a heat exchanger.

The preheated exhaust of the heat exchanger will then enter the Pillar Catalytic Converter where a modulating burner will raise the temperature to 460°F. The fume laden exhaust subsequently passes over the catalyst bed and is oxidized.

Oxidation is the chemical process in which hydrocarbon and oxygen molecules combine at a given temperature to form harmless carbon dioxide and water vapor. The oxidation of the hydrocarbons results in the release of energy and, hence, a rise in the process flow temperature. It is estimated that a temperature rise of 100°F will be experienced across the catalyst bed.

When press #5 is on, the exhaust flow will be returned to the heat exchanger for this press and then directed back to the fresh air inlet of the press, which is situated on the roof. Hence, energy consumption for press #5 will be reduced because of the preheated air. The air temperature brought back to the press will be about

15°F below operating temperature to allow the present press burner to finally control temperature. The volume of air returned to the press will be about 80% of the exhaust to avoid overpressurizing the press and causing fumes back into the room.

The balance of the exhaust will be transferred to the other heat exchangers, and then ducted to a mixing plenum near press #3. The mixing plenum will be maintained at a temperature 150°F below the lowest temperature of press #1, #3 and #4. Ducts from the mixing plenum will be brought over to the supply blowers of the presses for the preheated air.

Balancing dampers will be supplied in all required lines. If the situation occurs that over 20,000 CFM is being exhausted from the plant, the Catalytic Converter system will automatically vent to atmosphere. When the exhaust volume is below 20,000 CFM, the vent dampers will close and all exhaust will pass through the Catalytic Converter.

Based upon the above system description, we propose to supply:

Engineering: Supply general arrangement drawings of the system and all ductwork to and from the presses.

Equipment:

1. One (1) Pillar Corporation, Model 20,000 SCFM Catalytic Converter including modulating gas burner, blending chamber, catalyst bed with inlet and outlet plenums.
2. Heat exchangers designed to preheat the effluent from the presses with the incinerator exhaust. The heat exchangers are designed for a flow of 20,000 SCFM.
3. Four high pressure blowers.
4. Ducting from press exhaust to heat exchanger and Catalytic Converter.
5. Ducting from Catalytic Converter to heat exchanger and mixing plenum and presses.
6. Blending plenum for presses #1, #3 and #4.
7. Incinerator controls, dampers for supply and exhaust with two position modulating motors at heat exchanger, face and by-pass dampers to regulate temperature back to the presses, and air flow balancing dampers.

Installation:
1. Erect Catalytic Converter heat exchangers, interconnecting plenum, and blowers on roof.
2. Erect all exhaust ductwork from presses to inlet of heat exchangers.
3. Erect all supply ductwork from outlet of heat exchangers to presses.
4. Install all balancing dampers.
5. Startup and balancing of system.

Price: FOB Milwaukee, Wisconsin - $155,000.00
Delivery: 16 weeks after receipt of order
Terms: 25% with order placement, 65% upon shipment, balance upon startup
Notes:
1. No structural analysis of the building is included in this proposal.
2. No electrical wiring, motor starters or disconnect boxes are included in this proposal.

Economic Considerations

The savings associated with the proposed system design are determined by estimating the energy savings associated with preheated air back to the process minus the cost of operating the incinerator.

The amount of energy that can be supplied back to the process is:

$$BTU/hr = (1.08)\ (SCFM)\ (\Delta t)$$

Where the SCFM is the flow and Δt is the temperature difference between the supply temperature and the average yearly ambient temperature.

If it is assumed that the supply flow back to press #5 is 10,000 SCFM at 185^{o} and the supply flow back to presses #1, #3 and #4, is 10,000 SCFM at 145^{o}, then the energy savings is:

$$BTU/hr = (1.08)\ (10{,}000)\ (185^{o}-70^{o}) + 1.08)\ (10{,}000)\ (145^{o}-70^{o})$$
$$= 1{,}242{,}000 + 810{,}000$$
$$= 2{,}052{,}000\ BTU/hr$$

The amount of energy that is required to operate the Catalytic Converter is:

$$BTU/hr = (1.08)\ (20{,}000)\ (460-408)$$
$$= 1{,}123{,}200\ BTU/hr$$

Hence, the net hourly savings is 829,000 BTU/hr. Assuming that fuel costs are $.65/therm (100,000 BTU), it is seen that there is a net savings of $5.39/hr. Assuming operating hours are 24 hours/day, 6 days/week, 50 weeks/year or 7200 hours/year, we project a yearly savings of $38,808.00.

In addition to the above savings, a rebalancing of press #5 exhaust from the present 12,629 ACFM to the design conditions of 9,230 ACFM will yield an additional savings of $2.49/hour of operation. If is is assumed that the press is on for 3600 hours, the yearly savings is an additional $8,964.

We thank you for the opportunity to submit this proposal. If you have any questions regarding the equipment or installation, please contact me.

Sincerely,

PILLAR CORPORATION

Wayne Collins
dw

Wayne M. Collins
Marketing Manager
Advanced Products

WMC/dw

ANGUIL ENERGY SYSTEMS, INC.

4530 N. OAKLAND AVENUE • MILWAUKEE, WI 53211
(414) 332-0230 • (414) 332-1105

April 19, 1984

Mr. Kenneth Spechals
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Subject: Catalytic Converter with Heat Recovery

Dear Ken,

The purpose of this memorandum is to present the basic system design for the Pillar Catalytic Converter with heat recovery and recirculation system.

The design is based upon the "Design Exhaust Flows" of the presses which are presented in Table 1. Table 2 shows the various combinations of exhaust flows that may be present. Table 2 is subdivided into three sections. The first section where the total combined flows are less than 20,000 CFM, the second section where the combined flows are between 20,000 CFM and 23,000 CFM and the third section where the combined flows are above 28,000 CFM.

Since the system is to be designed for 20,000 CFM, it is planned that the exhaust flows for all the presses be reduced by 10% so that conditions 11, 12, and 13 can be processed by the catalytic converter. The reduction in exhaust flow will result in increased LEL levels and hence energy savings. Following is a description of the system operation.

SYSTEM DESCRIPTION

The exhaust from Press #1,3, 4 and 5 are ducted to A, the air to air heat exchanger. The exhaust temperature is raised by the hot exhaust gases exiting the catalytic converter. The heat exchanger has been selected to be 60% efficient to minimize the fuel consumption of the catalytic converter and to avoid the potential of overheating of the system.

Since it is anticipated that there will be a 17^{o} rise in temperature per 1% LEL, a 10% LEL would yield a 170^{o}F rise across the catalyst bed. Hence if the exhaust streams from the presses arrive at the heat exchanger at 120^{o}F, and the exhaust from the catalytic incinerator is 620^{o}F, (450^{o} base + 170^{o} temperature rise), it is seen that the temperature difference between the two steams is;

$$\Delta t = 620 - 120 = 500^{o} F$$

TABLE 1. DESIGN EXHAUST FLOWS

PRESS NO.	DESIGN EXHAUST (CFM)	
1	OHD	727
	BCD	2,516
3 *	OHD	3,486
	BCD	5,290
4	OHD	3,486
	BCD	5,290
5	OHD	4,240
	BCD	6,675
TOTAL:		31,710

* Press No. 3 has two cold end exhausts, Z-1 and Z-2 rated at 2,499 and 1,660 CFM respectively. These exhausts will always be recirculated.

TABLE 2. EXHAUST FLOW COMBINATIONS

CONDITION	PRESSES COMBINATION	COMBINED FLOW (CFM)
1.	1	3,243
2.	3	8,776
3.	4	8,776
4.	5	10,915
5.	1 and 3	12,019
6.	1 and 4	12,019
7.	1 and 5	14,158
8.	3 and 4	17,552
9.	3 and 5	19,691
10.	4 and 5	19,691
11.	1 and 3 and 4	20,795
12.	1 and 3 and 5	22,934
13.	1 and 4 and 5	22,934
14.	3 and 4 and 5	28,467
15.	1 and 3 and 4 and 5	31,710

Hence a 60% efficient heat exchanger will yield a temperature rise of .6 x 500 = 300° F. The inlet temperature to the burner section therefore, results in a temperature of 120° + 300° F = 420° F, letting the burner trim out the temperature to 450°F.

When conditions 1, 2, ... or 13 (See Table 2) exist, the appropriate press system fan, D, is on and all of the exhaust from the OHD and BCD goes through the incinerator.

The incinerator exhaust subsequently passes through the heat exchanger and then to the inlet of the system fans, D. The outlet of the system fans, D, then enters the Pressure Compensating Plenum, E, where the pressure of the heat recovery portion of the system is controlled.

The Pressure Compensating Plenum subsequently feeds the Recirculation Plenum, F, where the cold end of Press #3 is entering, if it is on. The hot exhaust flows, at 320° F are then blended with any recirculating exhaust and are returned to the inlet of the presses' supply fans. Fresh air is mixed at the inlet of the supply fan with the outlet of F, to control the temperature entering the press.

This complets the system flow under conditions 1 - 13.

Under conditions 14 or 15, the output of Press #3 is shunted away from the heat exchanger and into the Recirculation Plenum, F, while the system exhaust fan for Press 3 is shut down. If any of the presses shut down, then the output of Press 3 is permitted to be returned to the heat exchanger.

I hope that the above description will be adequate for your needs. Please contact Wayne or me if you have any questions.

Very truly yours,

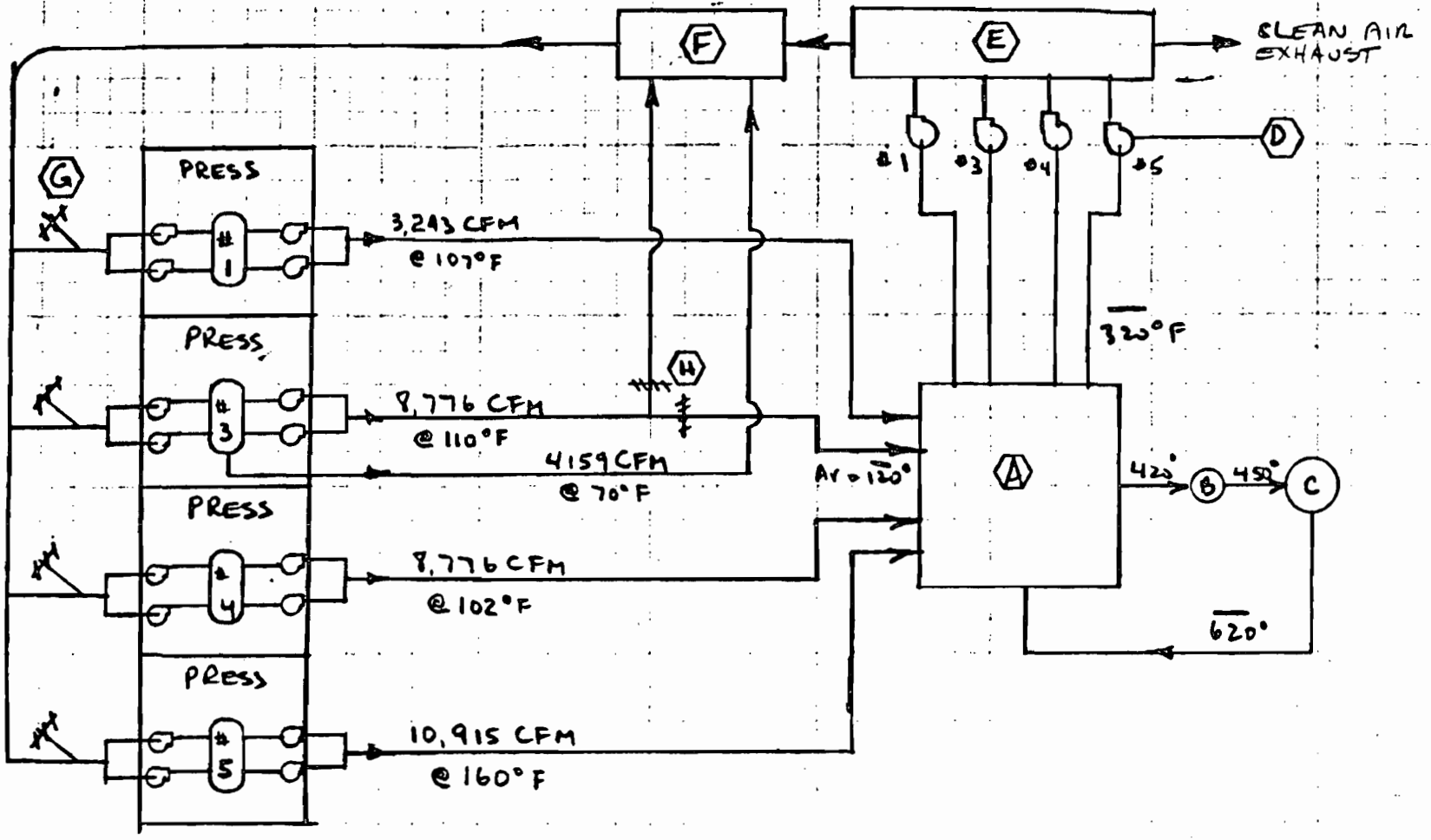
ANGUIL ENERGY SYSTEMS

Gene H. Anguil
President

/bma
cc: Wayne Collins - Pillar Corp.

ARNOLD CELLOPHANE

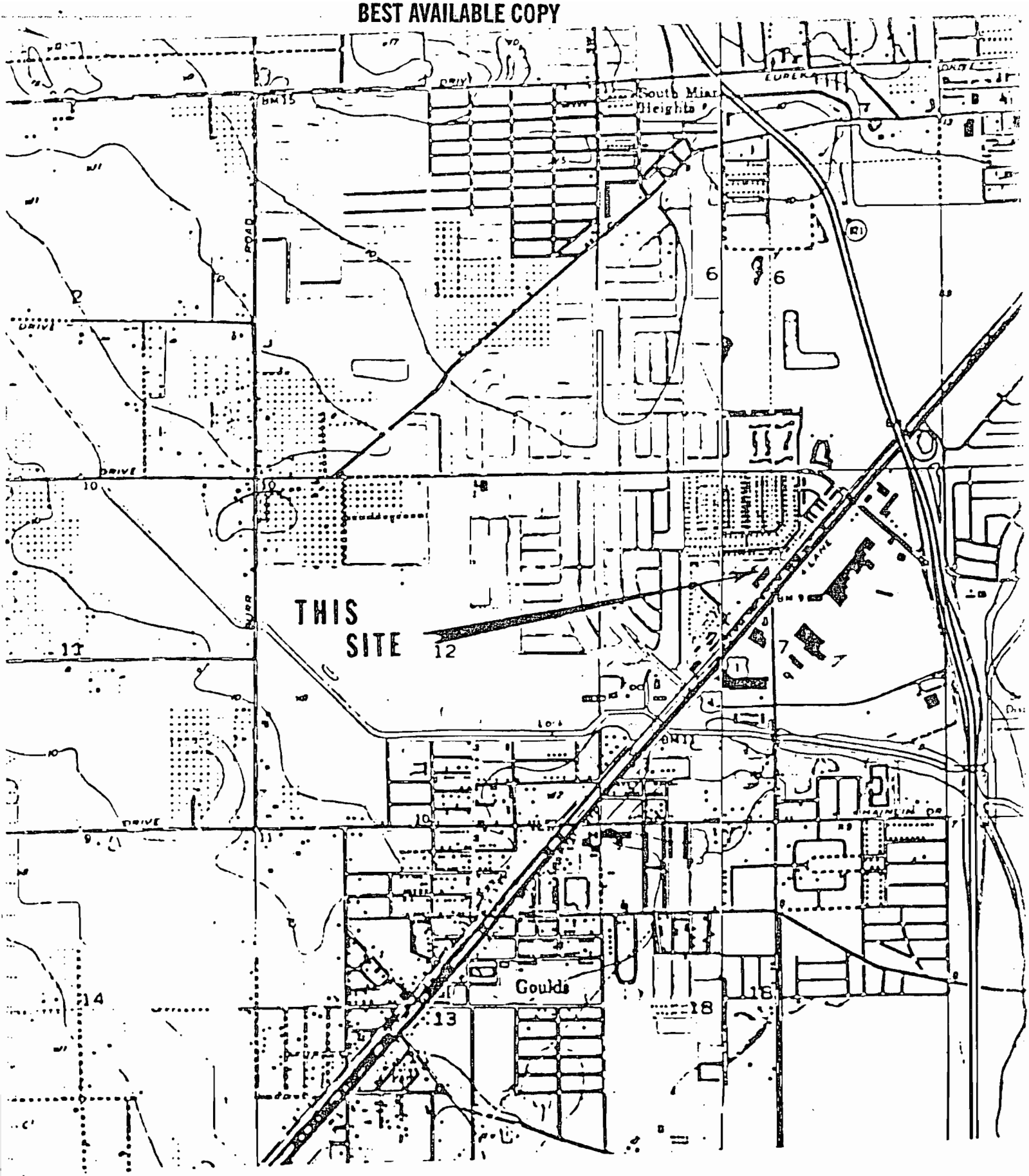
SYSTEM SCHEMATIC



LEGEND :

- (A) 60% HEAT EXCHANGER
- (B) BURNER SECTION
- (C) CATALYTIC CONVERTER
- (D) 4 SYSTEM FANS
- (E) - PRESSURE COMPENSATING PLENUM
- (F) - RECIRCULATION PLENUM
- (G) TEMPERATURE CONTROL / FRESH AIR MIXING BACK TO SUPPLY FANS.
- (H) FACE & BY PASS DAMPERS

BEST AVAILABLE COPY



ARNOLD CELLOPHANE

DADE COUNTY FLORIDA

VICINITY MAP

State of Florida

Department of State

I certify from the records of this office that ARNOLD CELLOPHANE CORPORATION is a corporation organized under the Laws of the State of Florida.

The Charter Number for this corporation is 176675.

I further certify that said corporation has paid all fees due this office through December 31, 1981, and its status is active, as shown by the records of this office.

Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capital, this the 9th day of December, 1981

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

George Firestone
Secretary of State

CER 101 Rev. 12-80

ATTACHMENT 8

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

June 8, 1984

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Re: Completeness Review of the Application, AC 13-79884, to Install a Control System on Existing Flexographic Printing Presses and Involving Air Permits Nos. AC 13-55914 and AO 13-50662

Dear Mr. Speckhals:

The department has received your application to install a control system on existing flexographic printing presses, Nos. P-1, P-3, P-4, and P-5 (orginally P-6). The application has been deemed incomplete and the following information, including all assumptions and calculations, shall be submitted to the bureau before further processing will resume:

1. If there is any proprietary information required in any response(s) to the following requests, please identify and submit as a separate document and the bureau will maintain confidentiality.

2. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

3. Has flexographic printing press P-2 contained in permit AO 13-50662 been retired from service and/or been physically removed from service? If not, explain why this source was omitted from the control system strategy.

4. Since you failed to respond to the requests in the letter dated January 17, 1984, it has been attached and a response to each request is still required. Also, apply all of the requests to all of the affected sources, including P-2 if applicable.

5. Submit a methodology that will be used to assess the over-all collection efficiency from the affected sources.

6. Calculate the pollutant emissions that will enter the control device from the affected sources, including P-2 if applicable.

7. Calculate the potential pollutant emissions from the affected sources, including P-2 if applicable.

8. How often will the control system be by-passed due to excessive air flow exceeding the control system capabilities?

9. Why isn't the control system designed to handle the total volume of the affected sources?

10. Explain why you consider the violation of RACT by by-passing the control-system periodically acceptable?

11. Based on the design specifications you submitted for the control system, the proposal is unacceptable. Therefore, resubmit another control strategy that will meet RACT.

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/BM/s

cc: T. Tittle
P. Wong
N. Wright
D. M. Ambrose

attachment

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 17, 1984

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Re: Completeness Review for the Application to Modify an Air Pollution Construction Permit: AC 13-55914

Dear Mr. Speckhals:

The bureau is in receipt of your letter and attachment dated December 16, 1983, in which you requested a modification to the above referenced construction permit. The application has been deemed incomplete and the following information, including all calculations and assumptions, shall be submitted before further processing of your request will resume:

1. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

2. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each ink (as delivered) and the amounts used (rounded to the nearest gallon), including their densities and the percent by weight of the solids, the solvent (separate if more than one), the water, and any other constituent(s).

3. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used as a make-up solvent, including the total amounts used (rounded to the nearest gallon), their densities, and the amounts recycled/reclaimed per each solvent.

4. Submit, on an annual basis and for the last 5 years (1979-83), a listing of each solvent (as delivered) used for cleaning purposes only, including the amounts used (rounded to the nearest gallon) and their densities.

5. Submit, on an annual basis and for the last 5 years (1979-83), a listing of any volatile organic compounds (VOC) per type not covered in # 2, 3, and 4 above, including the amounts used (rounded to the nearest gallon), their densities, and any amounts reclaimed/recycled per each solvent.

6. Submit, on an annual basis and for the last 5 years (1979-83), the amount of hazardous waste (rounded to the nearest gallon) and the percent of VOC that has been sent to an approved hazardous waste landfill. What is your RCRA number?

7. If the flexographic press P-6 (now P-5) has used any VOC and inks to date, separate from the above requested data and list here, including the pertinent information requested.

8. If there is any proprietary information required in any response(s) to the above questions, please identify and submit as a separate document and the bureau will maintain confidentiality.

9. List the vendor(s) used for recycling/reclaiming solvents, inks, and hazardous wastes, including their addresses and phone numbers.

10. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of pressure sensitive tape and label materials?

11. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of pressure sensitive tape and label materials?

12. This question only applies to the past and present operations at the existing facility. Have any of the existing printing sources at the existing facility been used for the manufacture of:

a) Catalogues, including mail order and premium,

b) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

c) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

d) Magazines,

e) Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

f) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

g) Periodicals, and

h) Telephone and other directories, including business reference services?

13. Will any of the existing printing sources and/or the new flexographic press P-6 (now P-5) be used for the manufacture of the items listed in question #12?

14. What do you propose as the add-on-control device(s) for the removal of the volatile organic compounds emitted from the flexographic press P-6 (now P-5)?

Sincerely,

E. H. Palagye

For C. H. Fancy, P.E.
Deputy Bureau Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: Nancy Wright
Patrick Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 9

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

July 23, 1984

Mr. C.H. Fancy
Department of Enviromental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Dear Mr. Fancy:

Re: Completeness Review of the Application, AC 13-79884 to Install a Control System on Existing Flexographic Printing Presses and Involving Air Permits Nos. 13-55914 and AO-13-50662, Your Letters June 8, 1984 and January 17, 1984

In response to your request for additional information on the referred permit applications, the following is submitted. All proprietary information relating to material usage is attached.

(1) An approved compliance schedule for meeting the requirements of FAC 17-2.510(4)(b) has been agreed to between the DER and ourselves and as soon as the 30 day notice period is complete will be signed. A copy of this Consent Order is available through N. Wright.

(2) Flexogrpahic Printing Press P-2 was not considered in our permit application because its fate is undecided. We may use P-5 when final permit is issued to replace P-2 or we may decide to permit P-2 to run LST materials exclusively. Our decision will be based on our needs at the time and our ability to run P-2 with all compliance materials.

(3) Regarding collection efficiency methodology, Bruce Mitchell visited our facility on June 20th. We showed Mr. Mitchell our operation and discussed how we might proceed to provide the data you request. I do not believe there is an established test protocal which has been used or sponsored by the EPA, so in effect we will try to provide some meaningful data by running a 24 hour material balance on inks and solvents used on one press and one job, selected to be typical of our operation. I don't think a best case/worst case test would be an applicable test because the means of the

continued....

data would probably not be representative of our average capture efficiency.

In setting up a material balance test, I propose that we define fugitive losses as the make-up solvents we must add to maintain our inks at proper printing viscosity. Solvents added to the purchased ink are dilution solvents. If we keep these types of additions separate during a 24 hour test, we can estimate the collection or capture efficiency by dividing the total solvent emission minus the make-up solvent used, by the total solvent emission. The total solvent emission is the sum of the make-up solvents, the dilution solvents and the solvent in the ink as purchased (data supplied by the vendor).

(4) The potential emissions entering the system are estimated at 386 tons per year. Status of P-2 was discussed previously. We believe the potential emissions entering the control device will be less than 386 tons because we are continuing development on water based white ink for certain types of products that we manufacture. I am not able to forecast emissions beyond what has already been submitted in our application.

(5) The emission system will not be bypassed because of excess air flow. Air volume in excess of the incinerator will be recirculated back into the oven in a closed loop system. Only clean air will be exhausted. There are two reasons for designing the system this way; first economy of operation. We raise the solvent concentration by recirculating excess air and thereby save energy needed for combustion. Secondly the cost of equipment is substantially reduced. Since only clean air is exhausted we do not consider this system to be a violation of RACT, even when operating at full air flows; that is, with all presses and all ovens at the same time.

(6) Our presses are not used for printing or manufacturing any of the items referred to in questions 10 to 13 in your letter of January 17, 1984.

(7) Concerning your request for 5 year data listing of each ink as delivered, the amounts used, densities, % solids and any other constituents including make-up solvents; we simply do not have this data or know of any way to provide the details you ask for. At present, the best information we can provide is based on vendor supplied data and is attached. In order to consolidate our data, I'm submitting the charts that characterize the inks as either white or color and estimate the typical average specification for each type of ink. The reason for this, being that we run thousands of batches of inks and formulations a year and I doubt that we could provide better data by doing a detailed accounting, than already provided.

continued...

(7) Cont'd

The chart also provides the quantity and types of solvents that we use in the inks. We have no idea how much of the solvent was used as make-up (fugitive loss) and how much was used as dilution to bring the inks to an as-applied viscosity. Finally we are only able to submit data for three years - 1981, 1982 and 1983. Even with this data we have had to make some assumption and estimates, especially for 1981.

We do not purchase washup or cleaning solvents as such. We use either the clean new solvents in the colors when we finish a job or we reclaim solvent for washing machinery. The clean solvents used for cleaning printing decks and pumps are put into inks that are inventoried for reuse at the end of a job.

(8) Solid and liquid waste as well as solvent reclaimed for washup is as follows:

(A) <u>Recylced - Reclaimed Flammable Liquid Numbers</u>

Ship to: M & M Chemicals & Equipment Co.
U.S. Highway 11, North
Reece City
Etowan County, Alabama

I.D. # ACD070513767
Permit # ACD070513767

1979	No Records
1980	No Records
1981	31,680 gals. @ 15% solids estimated
1982	48,015 gals. @ 15% solids estimated
1983	52,800 gals. @ 15% solids estimated

VOC density estimated at 6.9#/gal.

(B) <u>Solid Waste Numbers - Landfill</u>

Ship to: Chemical Waste Management
P.O. Box 55
Emelle, Alabama 35459

I.D. No. ACD000622464

1979	No Records
1980	No Records
1981	14,960 gals. @ 30% solid estimated
1982	11,110 gals. @ 30% solid estimated
1983	1,155 gals. @ 30% solid estimated

VOC density estimated at 6.9#/gal.

continued...

Yours truly,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals

Kenneth H. Speckhals
Technical Manager

KHS:gh

Encls: Confidential Data

cc: T. Tittle
P. Wong
N. Wright
D.M. Ambrose

ATTACHMENT 10

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

October 25, 1984

DER

OCT 30 1984

BAQM

Mr. Bruce Mitchell
Department of Environmental Agency
Twin Towers Building
2600 Blair Stone Road
Tallahassee, FL. 32301

Dear Mr. Mitchell:

RE: TELEPHONE DISCUSSION ON APPLICATION TO CONSTRUCT/MODIFY AIR POLLUTION SOURCES: AC 13-80716, AND AC13-79884

As per our telephone conversation, I believe the following information will clarify several of my responses and calculations to the completeness reviews question asked in various letters from the Department.

1. Arnold Cellophane is classified as a major source of VOC. In 1983 our records indicated that we emitted:

	Tons/Year
Paper Coating:	617.1
Graphic Arts:	613.3
Total:	1230.4

I have re-estimated emissions of P-5 which is presently still under a construction permit, AC 13-55914, and which is to be modified by the installation of a Pillar catalytic incinerator, AC 13-80716.

2. Estimate of potential emissions of P-5 after control with incinerator:

P-5 is expected to account for one third of the total output of our printing when the controls are installed. We do not expect to see substantial increase in production as P-2 will either be retired or permitted to run low solvent compliance inks.

P-5 emissions without control:

613.3 tons/yr. *(1/3) = 204.2 tons/year.

After control we estimate a 70% average capture on P-5 and a 95% reduction efficiency of the incinerator.

204.2 tons/year - 95% * (204.2 tons/year * 70%) = 68.4 tons/year

continued...

Since the potential emissions of P-5 exceeds 40 TPY, we propose LAER is the add-on-control system we plan to install.

In order to clarify our estimate of potential emmission on C-2 (permit application AC 13-80716), I am re-submitting the data and method of calculation.

3. Potential Emission for C-2

A. Estimate of maximum units of production in reams(3000 ft.^{2}) per year coated with LVT, compliance material at/or less than 2.9 lbs. VOC per gallon applied, less water.

The following forecast is based on historical and test data:

average line speed	@	350 fpm
average web width	@	3.33 ft.
% utilization	@	60%

To calculate annual reams per year:

350 ft./min * 3.33 ft. * (1/3000 ft.^{2}/ream)* 60 min/hr * 6000 hr/yr * 60% = **83,900 reams/year**

B. Calculate lbs. of VOC per ream allowed by rule where the average content of the paper coating material does not exceed 2.9 lbs. VOC per gallon applied.

The following calculations are based on averaging paper coating material used in 1983 of 5 machines (L-2, L-3, L-5, L-6 and C-1)

	1000 units
coating (gals.)	220.08
coating (lbs.)	1689.7
VOC (lbs.)	1237.3
VOD (gals.)	173.13
water (lbs.)	62.7
water (gals)	8.94
solids (lbs.)	385.6
ream produced	215 (estimated)

(1) density of solids

385.6 lbs. solid * (1/(220.08 - 173.3 - 8.94 gal) = 10.19 lbs. solid/gal.

(2) density of VOC

1237.3 lbs. * (1/173.3 gal) = 7.15 lbs. VOC/gal

(3) convert 2.9 lbs. VOC per gallon applied less water into lbs. VOC per ream.

2.9 lbs. VOC * (1/7.15 lbs/gal) = .4056 gal. VOC/gal applied

1.00 gal. applied - .4056 gal. VOC = .5944 gal. solids

0.5944 gal. solid * 10.19 lgs. solid/gal. = 6.057 lbs. solid/gal. applied

continued...

2.9 lbs. VOC * (1/6.057 lbs/gal) = 0.479 lbs. VOC/lb. solids

385.6M lbs. solid * (1/215M reams) = 1.79 lb. solid/ream

0.479 lbs. VOC/lbs. solids * 1.79 lb. solid/ream = .857 lbs. VOC/ream

C. Calculate potential annual emission after control of VOC at 2.9# VOC per gal. applied less water.

83,900 ream/yr. * .857 lbs. VOC/ream *(1/2000 lbs./ton)= 36.0 ton VOC/yr.

I hope the information provided will be what is needed to complete the permitting process. If you have any questions, please call me.

Sincerly,

Kenneth H. Speckhals

KHS:mrs

cc: N. Wright, DER Tallahassee
P. Wong, DERM
T. Tittle, DER, W. Palm Beach

ATTACHMENT 11

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

November 2, 1984

Mr. Bruce Mitchell
DER
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Mitchell:

Per your request, I have calculated VOC, nitrogen oxide and sulfur dioxide burner emissions of our combined plant for 1983. P-5 and C-2 are not included in the usage.

In 1983 we used 1.468×10^7 ft^3 of natural gas at 1069 Btu/ft. (average) and operated about 6000 hrs.

Based on the API data in table 1.4 - 1 all of our natural gas burners emitted:

	Actual (TPY)	Potential (TPY)	Potential #/Hr.
VOC	.039	0.05	0.017
Nxo	.735	1.00	0.32
SO_2	.004	.005	0.002

With the addition of C-2 and P-5, we estimate that each machine will increase natural gas usage by 10% of the total and the potential emissions would be as follows:

Potential	C-2	P-5
VOC-TPY	0.005	0.005
VOC Lbs/Hr.	0.0017	0.0017
NxO TPY	0.100	0.100
NxO Lbs./Hr.	0.032	0.032
SO_2 TPY	0.0005	0.0005
SO_2 Lbs/Hr	0.0002	0.0002

Continued...

I hope this information is sufficient, please call me if you have any questions.

Sincerely yours,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals
Technical Manager

KHS:gh

ATTACHMENT 12

ATTACHMENT 12

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Arnold Cellophane Corporation file

FROM: Bruce Mitchell BM

DATE: November 19, 1984

SUBJECT: Pollutant Emission Projections from Natural Gas Fired Driers/Heaters - based on AP-42 Emission Factors Table 1-4.1 and Kenneth H. Speckhals' letter, dated 11/2/84.

Natural Gas Usage per Year

Existing facility: 1.468×10^7 ft^3

P-5: 10% of existing facility

Pollutant Emissions

°Particulate matter (PM): 5 lbs/10^6 ft^3

Existing facility: 73.4 lbs/year = 0.04 TPY

P-5: 0.004 TPY

°Sulfur dioxide (SO_2) : 0.6 lb/10^6 ft^3

Existing facility: 9 lbs/year = trace

P-5: trace

BM/rw

TABLE 1.4-1. UNCONTROLLED EMISSION FACTORS FOR NATURAL GAS COMBUSTION[a]

Furnace Size & Type (10^6 Btu/hr heat input)	Particulates[b]		Sulfur Dioxide[c]		Nitrogen Oxide[d,e]		Carbon Monoxide[f,g]		Volatile Organics: Nonmethane		Volatile Organics: Methane	
	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$	$kg/10^6m^3$	$lb/10^6ft^3$
Utility boilers (>100)	16-80	1-5	9.6	0.6	8800[h]	550[h]	640	40	23	1.4	4.8	0.3
Industrial boilers (10 - 100)	16-80	1-5	9.6	0.6	2240	140	560	35	44	2.8	48	3
Domestic and commercial boilers (<10)	16-80	1-5	9.6	0.6	1600	100	320	20	84	5.3	43	2.7

[a] All emission factors are expressed as weight per volume fuel fired.
[b] References 15-18.
[c] Reference 4 (based on an average sulfur content of natural gas of 4600 $g/10^6$ Nm^3 (2000 $gr/10^6$ scf).
[d] References 4-5,7-8,11,14,18-19,21.
[e] Expressed as NO_2. Test results indicate that about 95 weight % of NO_x is NO.
[f] References 4,7-8,16,18,22-25.
[g] References 16 and 18. May increase 10 to 100 times with improper operation or maintenance.
[h] Use 4400 $kg/10^6$ m^3 (275 $lb/10^6ft^3$) for tangentially fired units. At reduced loads, multiply this factor by the load reduction coefficient given in Figure 1.4-1. See text for potential NO_x reductions by combustion modifications. Note that the NO_x reduction from these modifications will also occur at reduced load conditions.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

November 27, 1984

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

Dear Mr. Speckhals:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to install a coater/laminator designated C-2 at your existing facility in Miami, Dade County, Florida.

Before final action can be taken on your draft permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Dade County no later than fourteen days after receipt of this letter. The department must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permit.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa
Attachments
cc: T. Tittle
P. Wong
D. M. Ambrose
D. Thompson

State of Florida
Department of Environmental Regulation
Notice of Proposed Agency Action
on Permit Application

The Department of Environmental Regulation gives notice of its intent to issue a permit to Arnold Cellophane Corporation to install a new coater/laminator designated C-2. The unit will have two associated high volume forced air driers/heaters that will be fired with natural gas. The proposed construction will be located at Arnold Cellophane Corporation's existing facility at 20400 S.W. 112th Avenue, Miami, Dade County, Florida. A determination of best available control technology (BACT) was not required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitutes a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this preliminary statement. Therefore, persons who may not object to the proposed agency action may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Southeast District
3301 Gun Club Road
West Palm Beach, Florida 33402

Dade County Dept. of Environmental Resources Management
909 Southeast 1st Avenue
Brickell Plaza
Miami, Florida 33131

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an Application for Permit by	)	
Arnold Cellophane Corporation 20400 S.W. 112th Avenue Miami, Florida 33157	)	DER File No. AC 13-080716

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its Intent to Issue, and proposed order of issuance for, a permit pursuant to Chapter 403, Florida Statutes, for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Arnold Cellophane Corporation, applied on January 5, 1984, to the Department of Environmental Regulation for a permit to install a coater/laminator designated C-2 in Miami, Dade County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The applicant was officially notified by the Department that an air construction permit was required for the proposed work.

This intent to issue shall be placed before the Secretary for final action unless an appropriate petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes, is filed within fourteen (14) days from receipt of this letter or

publication of the public notice (copy attached) required pursuant to Rule 17-103.150, Florida Administrative Code, whichever occurs first. The petition must comply with the requirements of Section 17-103.155 and Rule 28-5.201, Florida Administrative Code (copy attached) and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301.

Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witness and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exception to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition, may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of

Administrative Hearings, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahase, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statues.

Executed the 27 day of NOVEMBER, 1984, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Kenneth H. Speckhals, Arnold Cellophane Corporation
D. M. Ambrose, P.E., D. M. Ambrose Associates
Tom Tittle, DER Southeast District
Dan Thompson, DER Office of General Counsel
Patrick Wong, Dade County Department of Environmental Resources Management

Technical Evaluation
and
Preliminary Determination

Arnold Cellophane Corporation
Dade County
Miami, Florida

Permit Number:
AC 13-80716

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

November 27, 1984

I. Applicant and Source Location

A. Applicant

Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33157

B. Project and Location

The applicant proposes to construct/install a new air pollution source designated as C-2, coater/laminator, at its existing facility located at the above address in Dade County, Florida. The coater/laminator will have two associated high volume forced air driers/heaters that will be fired with natural gas.

The UTM coordinates are Zone 17, 563.2 km East and 2828.6 km North.

C. Process and Controls

The coater/laminator is a two-coating station machine which can coat or laminate 52-inch wide rollstock up to 600 feet per minute. Average line speed is 350 feet per minute.

The applicant intends to apply low solvent technology (LST) to achieve low VOC (volatile organic compounds and organic solvents) emissions. If LST is not achievable, an add-on control system will be required.

II. Rule Applicability

The pollutants to be emitted from the proposed project are VOC, particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO_2), pursuant to Florida Administrative Code (FAC) Rule 17-2.100.

The following (Table 1) will display the annual potential pollutant emissions in tons per year (TPY) from the existing facility (based on 1983 data), which includes the facility's newest source P-5 (AC 13-79884):

Table 1

Existing Facility	Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO_2
Graphic Arts	477.3				
Paper Coating	617.1				
Driers/Heaters	0.04	0.04	0.80	0.17	trace
TOTAL:	1094.44				

*Note: ° Driers/Heaters: Emissions (products of combustion) based on AP-42 Emission Factors Table 1.4-1.
° Driers/Heaters: VOC emissions are estimated for nonmethane.
° C-2: required a determination of LAER (Lowest Achievable Emission Rate).

The existing facility is major for the pollutant VOC in accordance with FAC Rule 17-2.100(98) and is located in an area designated nonattainment for the pollutant ozone in accordance with FAC Rule 17-2.410(1)(d). VOC's are precursors to ozone.

The following (Table 2) will display the annual projected potential pollutant emissions in TPY for C-2:

Table 2

C-2	Projected Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO
Coater/Laminator	36.0				
Drier/Heater	0.004	0.004	0.073	0.015	trace

*Note: ° C-2 unit is estimated to increase natural gas usage by 10% of the facility's 1983 usage.
° Drier/Heater: Emissions (products of combustion) based on AP-42 Emission Factors, Table 1.4-1.
° Drier/Heater: VOC emissions are estimated for nonmethane.

Since the projected potential VOC emissions for C-2 are less than the significant emission rates (40 TPY VOC) displayed in Table 500-2, pursuant to FAC Rule 17-2.510(2)(e)2., the source's VOC emissions shall be exempted from preconstruction review requirements pursuant to FAC Rule 17-2.510(4) in accordance with FAC Rule 17-2.510(2)(d)4.a., Modifications to Major Facilities. Because the projected potential emissions of PM, NO_x, CO, and SO_2 for C-2 are all less than the significant levels, no review shall be required pursuant to FAC Rule 17-2.500, Prevention of Significant Deterioration (PSD). Therefore, the source's pollutant emissions shall be reviewed in accordance with FAC Rule 17-2.520, Sources Not Subject to PSD of Nonattainment Requirements, and shall be permitted in accordance with FAC Rule 17-2.650(1)(f)3., Paper Coating/Reasonable Available Control Technology.

FAC Rule 17-2.650(1)(f)3.b. states that no owner or operator of a paper coating line may cause, allow, or permit the discharge into the atmosphere of any VOC in excess of 2.9 pounds per gallon of coating (0.35 killograms per liter), excluding water, delivered to the coating applicator from a paper coating line.

The control technology required, pursuant to FAC Rule 17-2.650(1)(f)3.c. are:

(i) The application of low solvent content coating technology; or,
(ii) Incineration, provided that 90 percent of the VOC (measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water.

As stated before, the applicant selected the control technology, pursuant to FAC Rule 17-2.650(1)(4)3.c.(i).

In accordance with FAC Rule 17-2.700, Stationary Point Source Emissions Test Procedures, Table 1, the source, C-2, shall demonstrate compliance with FAC Rule 17-2.650(1)(4)3.c.(i), using EPA Method 24, Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, unless provided by the vendor(s). Using this information, the applicant shall demonstrate compliance with the provisions of FAC Rule 17-2.650(1)(f)3.b.

The source is subject to the provision of FAC Rule 17-2.620(1)(a), which states that no person shall store, pump, handle, process, load, unload or use in any process or installation volatile organic compounds or organic solvents without applying known and existing vapor emission control

devices or systems deemed necessary and ordered by the Department. Therefore, some in-house preventive maintenance procedures shall be required to maintain minimum fugitive VOC (volatile organic compounds and organic solvents) emissions from the operation of C-2:

- maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
- where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
- all fittings, valves, lines, etc., shall be properly maintained;
- prevent excessive turbulence across any exposed VOC;
- all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
- maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

The source is subject to the provisions of FAC Rule 17-2.620(2), which states that no person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. Therefore, objectionable odors shall not be allowed on off-plant property.

The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and the Dade County's Environmental Resources Management. File all written reports with the same offices.

III. Summary of Emissions and Air Quality Analysis

A. Emission Limitations

The RACT standard limits the laminator/coater designated C-2 to a maximum of 2.9 pounds of volatile organic compounds per gallon of coating (0.35 kilograms per liter), excluding water, delivered to the coating applcator from the coating line.

The VOC emissions shall be controlled by employing at least one of the following technologies to attain the RACT limit:

- the application of low solvent content coating technology; or,
- incineration, provided that 90 percent of the volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidezed to carbon dioxide and water.

Since the proposed source C-2 is projected to potentially emit 36 TPY of VOC, the source was not subject to preconstruction review requirements pursuant to FAC Rule 17-2.510(4). Therefore, any modifications and/or new source VOC emissions increase that exceeds 40 TPY, which shall include C-2's emissions of 36 TPY VOC, review in accordance with FAC Rule 17-2.510(4) shall be required on the proposed action.

The emission limitations are in compliance with the applicable requirements of FAC Chapter 17-2.

B. Air Quality Analysis

An air quality analysis was not required.

IV. CONCLUSIONS

With the application of the applicable RACT standard to the proposed coater/laminator designated C-2, the department has determined that the source will be in compliance with all applicable requirements of FAC Chapter 17-2.

If the applicant fails to achieve the emission limiting standard with the application of low solvent content coating technology, an incinerator with an associated vapor capture and transfer system shall be required in accordance with FAC Rule 17-2.650(1)(f)3.C.(ii).

The General and Specific Conditions are listed in the attached proposed permit.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
Miami, Florida 33517

Permit Number: AC 13-80716
Expiration Date: October 1, 1985
County: Dade
Latitude/Longitude: 25° 34' 30" N/
80° 22' 15" W
Project: Installation of a coater/ lamimator designated C-2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility show on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction/installation of a new coater/laminator designated C-2. The unit will have two associated high volume forced air driers/heaters that will be fired with natural gas.

The construction/installation shall be in accordance with the permit application and plans, documents, amendments, and drawings, except as otherwise noted on pages 5-7 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources: DER Form 17-1.202., received 1/5/84.
2. C.H. Fancy's letter, dated 2/3/84.
3. Kenneth H. Speckhals' letter, with attachments, dated 4/17/84.
4. C.H. Fancy's letter, dated 5/14/84.
5. Kenneth H. Speckhals' letter, with attachments, dated 7/3/84.
6. C.H. Fancy's letter, dated 8/8/84.
7. Kenneth H. Speckhals' letter, dated 10/25/84.
8. Kenneth H. Speckhals' letter, dated 11/2/84.
9. Interoffice Memorandum, dated 11/26/84, from Bruce Mitchell.

PERMITTEE:
Arnold Cellophane Corporation

Permit Number: AC 13-80716
Expiration Date: October 1, 1985

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD).
( ) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. C-2 is subject to FAC Rule 17-2.650(1)(f)3.b., Emission Limiting Standards, which states that no owner or operator of a paper coating line may cause, allow, or permit the discharge into the atmosphere any volatile organic compounds (VOC) in excess of 2.9 pounds per gallon of coating (0.35 kilograms per liter), excluding water, delivered to the coating applicator from the paper coating line.

2. C-2 is subject to FAC Rule 17-2.650(1)(f)3.c., Control Technology, which states that the emission limit shall be achieved by:

(i) the application of low solvent content coating technology; or, (ii) incineration, provided that 90 percent of the VOC (measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water.

SPECIFIC CONDITIONS:

3. In accordance with FAC Rule 17-2.700, Stationary Point Source Emissions Test Procedures, Table 1, the source, C-2, shall demonstrate compliance with FAC Rule 17-2.650(1)(4)3.c.(i), using EPA Method 24, Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, unless provided by the vendor(s). Using this information, the applicant shall demonstrate compliance with the provisions of FAC Rule 17-2.650(1)(f)3.b.

4. The potential pollutant emissions projected for C-2 are:

C-2	Projected Potential Pollutant Emissions (TPY)				
	VOC	PM	NO_x	CO	SO
Coater/Laminator	36.0				
Drier/Heater	0.004	0.004	0.073	0.015	trace

*Note:
- C-2 unit is estimated to increase natural gas usage by 10% of the facility's 1983 usage.
- Drier/Heater: Emissions (products of combustion) based on AP-42 Emission Factors, Table 1.4-1.
- Drier/Heater: VOC emissions are estimated for nonmethane.

5. The source is subject to FAC Rule 17-2.620(1)(C), and some in-house preventive maintenance procedures will be required, but not limited to:

- maintain tightly fitting covers, lids, etc., on all containers of VOC when they are not being handled, tapped, etc.;
- where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, bath, etc., of VOC so that it can be covered when not in use;
- all fittings, valves, lines, etc., shall be properly maintained;
- prevent excessive turbulence across any exposed VOC;
- all VOC spills shall be attended to immediately and the discardings properly disposed of, recycled, etc.; and,
- maintain a monthly accounting of the VOC per type such that the beginning inventory and deliveries are accounted for.

PERMITTEE:
Arnold Cellophane Corporation

Permit Number: AC 13-80716
Expiration Date: October 1, 1985

SPECIFIC CONDITIONS:

6. Objectionable odors shall not be allowed on off-plant property, pursuant to FAC Rule 17-2.620(2).

7. The source is subject to the provisions of FAC Rule 17-2.250(1), (4), (5), and (6), Excess Emissions. Whenever a report of excess emissions is required, notify the DER's Southeast Florida District and DERM. File all written reports with the same offices.

8. Proposed operation is 24-hours per day, 5 days per week, and 52 weeks per year.

9. Prior to 90 days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER's Southeast Florida District and DERM. Full operation of the source may then be conducted in compliance with the terms of this permit until expiration of this permit or receipt of an operating permit.

Issued this_____day of_____, 19___.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

ATTACHMENT 1

#100 paid 1/5/84

AC 13-30716

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
3301 GUN CLUB ROAD
P.O. BOX 3858
WEST PALM BEACH, FLORIDA 33402

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: *PAPER COATING MACHINE* [XX] New[1] [ ] Existing[1]

APPLICATION TYPE: [XX] Construction [ ] Operation [ ] Modification

COMPANY NAME: *ARNOLD CELLOPHANE CORPORATION* COUNTY: *DADE*

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) *C- 2 coater/laminator*

SOURCE LOCATION: Street *20400 S.W. 112th Avenue* City *Miami*

UTM: East *17:563.2 KmE* North *2828.6 KmN*

Latitude ____° ____' ____"N Longitude ____° ____' ____"W

APPLICANT NAME AND TITLE: *Peter E. Coots, Chief Executive Officer*

APPLICANT ADDRESS: *Arnold Cellophane Corporation, 20400 S.W. 112 Ave., Miami, Fl. 33157*

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of *Arnold Cellophane Corp.*

I certify that the statements made in this application for an *air pollution source* permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: *Peter E. Coots*

Peter E. Coots, Chief Executive Office
Name and Title (Please Type)

Date: *12/15/83* Telephone No. *(305)238-5961*

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed _____

D.M. Ambrose, P.E.

Name (Please Type)

D.M. Ambrose Associates, Inc.

Company Name (Please Type)

6190 No. Federal Highway, Boca Raton, Fl. 33431

Mailing Address (Please Type)

Florida Registration No. 12831 Date: _____ Telephone No. 305-997-6790

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This is a request to install a coater-laminator that will use low solvent coating whose V.O.C. emissions will not exceed 2.9 lb. V.O.C. per gallon of coating applied and will result in full compliance. See attached for additional information.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Arpl 1, 1984 Completion of Construction June 1, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Pollution control is to be accomplished by the use of low solvent material which should meet or exceed the 2.9#/gal. V.O.C. requirement in Rule 17-2.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AO-13-50662, December 31, 1982;

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 5 ; wks/yr 52 ;

if power plant, hrs/yr no ; if seasonal, describe: not seasonal

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? yes

   a. If yes, has "offset" been applied? no

   b. If yes, has "Lowest Achievable Emission Rate" been applied? no

   c. If yes, list non-attainment pollutants. ozone

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. no

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. no

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? no

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? no

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source?

   a. If yes, for what pollutants?

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Paper Coatings	*V.O.C.*	*35*	*30.3*	*attached*

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
V.O.C.	*70*	*31.8*	*2.9 lbs/gal*	*70*	*380000*	*200*	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural gas	*0.00021*	*.00200*	*3,600,000 BTU's/hr.*

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

_____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

_____

_____

_____

_____

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [XX] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of conatruction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager: *Kenneth H. Speckhals*

(6) Telephone No.: *305-238-5961*

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ARNOLD CELLOPHANE CORPORATION

ATTACHMENT

SECTION II GENERAL PROJECT INFORMATION

This equipment will perform both paper and film coating, as well as laminating operations. It is similar in function to our C-1 coater and L-2, L-3,L-5 and L-6 laminating machines. It is a two coating station machine which can coat or laminate 52" wide rollstock up to 600 fpm. It has two high volume forced air dryers with exhaust capability of developing negative pressure in the dryer oven for efficient solvent removal.

It is needed as part of our LST implementation plan, to offset the loss of productivity due to reduced machine speeds we anticipate as we convert to water reducable coating and adhesives.

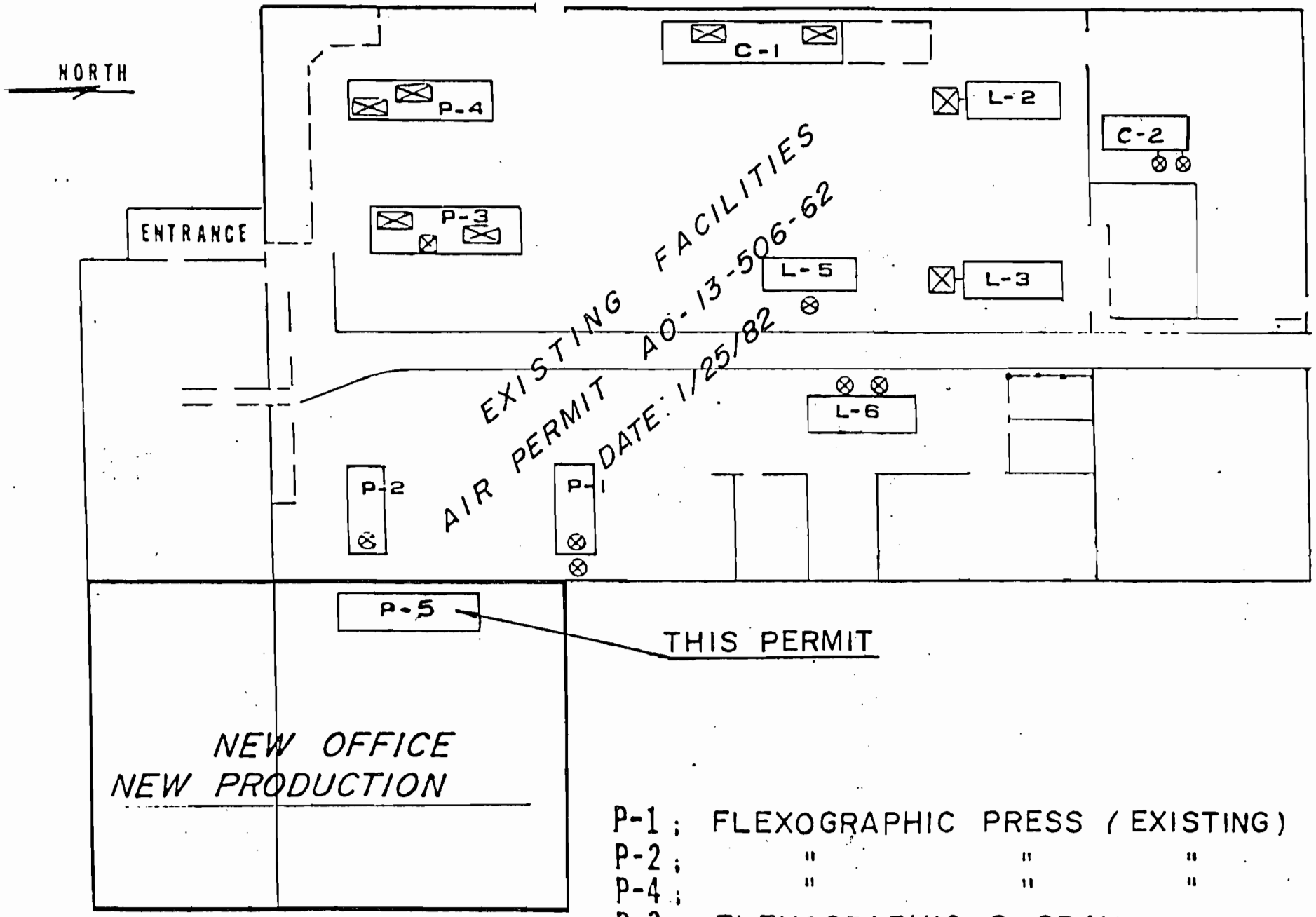
SECTION III. COMMENTS

V.O.C. emissions and potential emissions are calculated on the basis of our historical usage of coatings and adhesives. We estimate that we will not exceed 32 ton/year V.O.C. emissions at full LST compliance level of 2.9 lbs. V.O.C. per gal. as applied. The actual emission level will depend on the products we choose to manufacture and the gallons coating or adhesive require per unit production. The 2.9 lbs. V.O.C. emission per gallon includes make up solvent due to evaporative losses.

RNOLD CELLOPHANE

DE COUNTY FLORIDA

EQUIPMENT ARRANGEMENT SKETCH



P-1 ; FLEXOGRAPHIC PRESS (EXISTING)
P-2 ; " " "
P-4 ; " " "
P-3 ; FLEXOGRAPHIC & GRAVURE PRESS (EXISTIN

2 ; TWO COATING HEAD ADHESIVE LAMINATOR, (SAME FOR L-3, L-5, L-6) "
1 ; TWO STATION PVDC COATER (EXISTING)
5 ; FLEXOGRAPHIC PRESS (NEW)

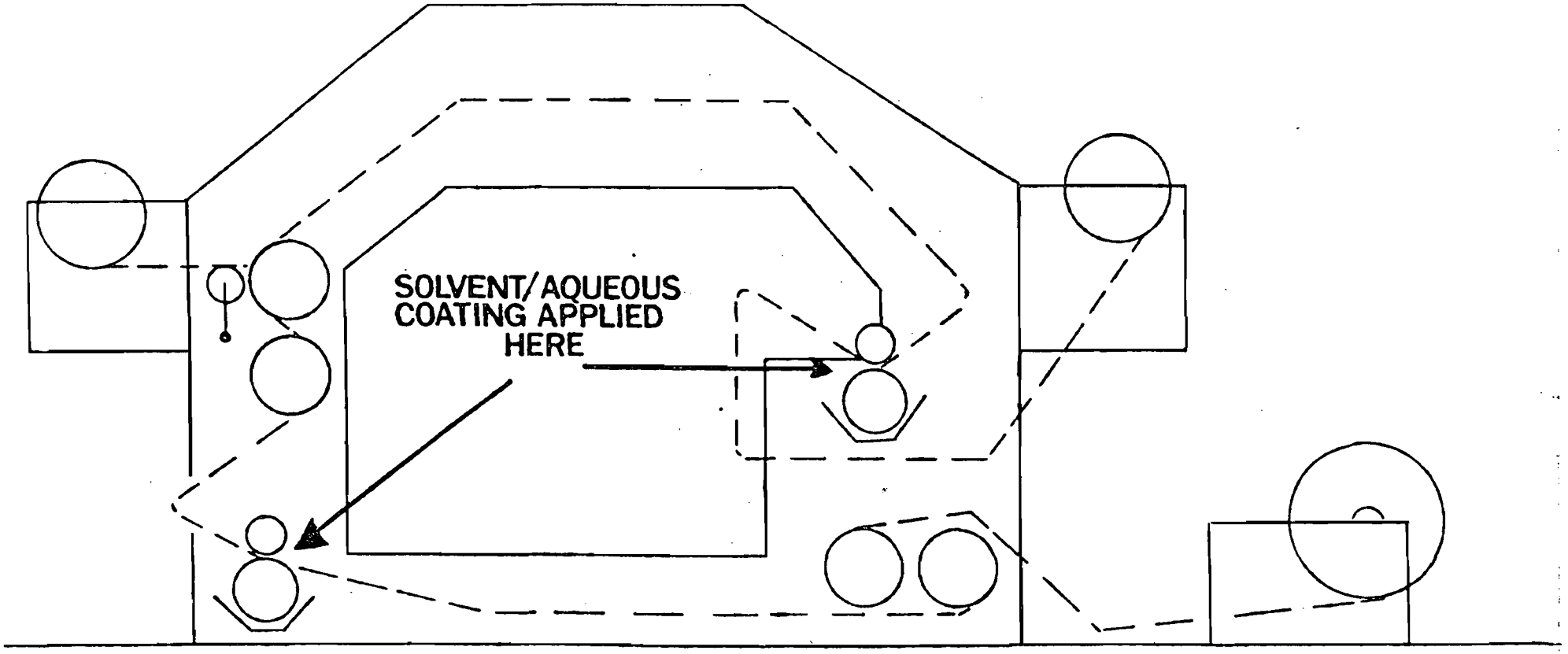
ARNOLD CELLOPHANE

DADE COUNTY FLORIDA

TWO STATION COATER/LAMINATOR C-2

SOLVENTS USED: ETHYL ACETATE
METHYL ETHYL KETONE
ETHYL ALCOHOL

EXHAUST STACKS: 2 - 15'Diameter



State of Florida

Department of State

I certify from the records of this office that ARNOLD CELLOPHANE CORPORATION is a corporation organized under the Laws of the State of Florida.

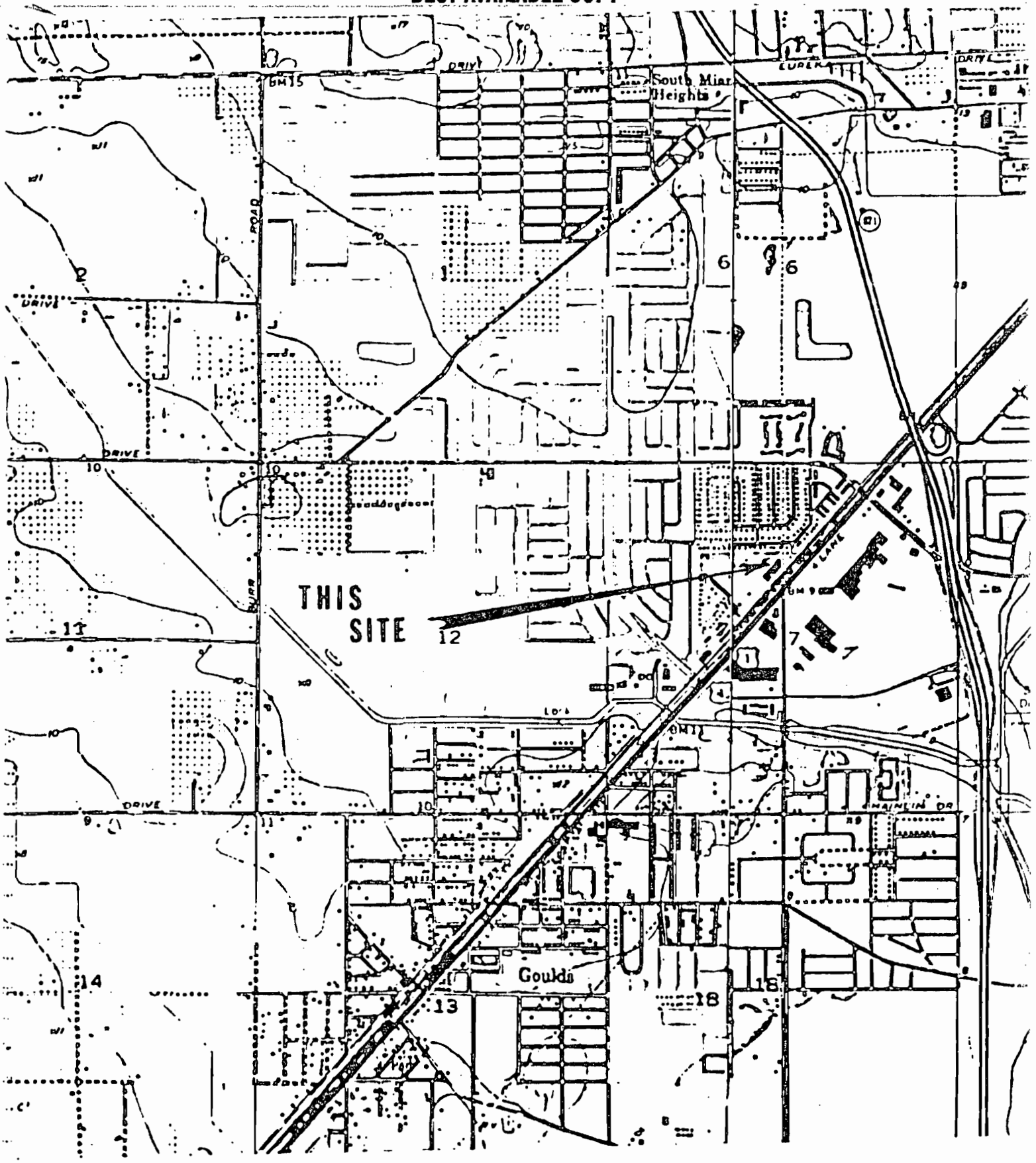
The Charter Number for this corporation is 176675.

I further certify that said corporation has paid all fees due this office through December 31, 1981, and its status is active, as shown by the records of this office.

Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capital, this the 9th day of December, 1981

George Firestone
Secretary of State

CER 101 Rev. 12-80



ARNOLD CELLOPHANE

DADE COUNTY FLORIDA

VICINITY MAP

SHEET 1

ATTACHMENT 2

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

February 3, 1984

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th. Avenue
P. O. Box 570370
Miami, Florida 33157

Re: Completeness Review for the Application to Construct a New Air Pollution Source: Permit No. AC 13-80716

Dear Mr. Speckhals:

The bureau is in receipt of the above referenced application for the construction of a new paper coating and laminating machine (designated C-2: coater/laminator) at the applicant's existing facility located at the above address. The application has been deemed incomplete and the following information, including all assumptions and calculations, shall be submitted before further processing will resume:

1. If there is any proprietary information required in any response(s) to the following requests, please identify and submit as a separate document and the bureau will maintain confidentiality.

2. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

3. From the maximum natural gas consumption projected in Section III. E. of the application calculate the potential emissions of all pollutants expected to be emitted from the combustion of the natural gas and resubmit that data in the appropriate section of an amended application.

4. What is the Btu per cubic foot of the natural gas to be combusted in C-2?

5. As purchased and per type, how many gallons of paper coating material per hour and annually will be used by C-2?

6. As purchased and for each type of paper coating material, identify all constituents and express their part of the whole as a "% by weight". Also, submit the density of each liquid constituent.

7. How many gallons of make-up solvent by type, as purchased, per hour, and annually will be used by C-2? Also, submit the density of each solvent identified.

8. Is/are any solvent(s) used for cleaning purposes? If so, submit and identify each solvent as purchased, quantify the annual usage, and provide their density.

9. Submit the calculations, assumptions, and reference material(s) for the numbers displayed in Section III. A. and C. of the application. If there are any changes, resubmit on an amended application.

10. Quantify the amounts (rounded to the nearest gallon) of volatile organic compounds (VOC) that are reclaimed/recycled. List the vendor(s) used for recycling/reclaiming solvents and coating wastes, including their addresses and phone numbers.

11. Will there by any hazardous waste(s) generated by the unit C-2? If so, where will the waste(s) be landfilled, who will be the vendor, and what is your RCRA number? Quantify the amount (rounded to the nearest gallon) to be produced on an annual basis and what percent by weight of the total is VOC.

12. Quantify the hourly amount (rounded to the nearest gallon) of VOC that will be emitted to the atmosphere prior to entering the oven phase of the production process.

13. Quantify the hourly amount (rounded to the nearest gallon) of VOC emitted to the atmosphere from the oven, including all assumptions, efficiencies of any controls, and pertinent information used in quantifying.

14. Besides the VOC in the coating material, make-up solvents, and cleaning solvents, will there be any other VOC used in association with C-2? If so, quantify the amount(s) (rounded to nearest gallon) to be used on an annual basis, including the density of each VOC.

15. Will the coater-laminator C-2 be used for the manufacture of pressure sensitive tape and label materials.

16. Do you produce and/or manufacture any adhesive cements at the existing facility? Will there be any production and/or manufacturing of any adhesive cements due to the addition of C-2? If the answer is yes, quantify on an annual basis the amount(s) (rounded to the nearest gallon) to be produced and/or manufactured, identifying the constituents on a "% by weight" basis and including the density of any liquid constituent.

17. Will the coater-laminator C-2 be used for the manufacture of:

    a) Catalogues, including mail order and premium,

    b) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

    c) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

    d) Magazines,

    e) Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

    f) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

    g) Periodicals, and

    h) Telephone and other directories, including business reference services?

18. Will there be any VOC controls associated with C-2? What efficiency would be expected (provide a vendor's specifications)?

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/BM/s

cc: Nancy Wright
Patrick Wong
Tom Tittle
D. M. Ambrose

ATTACHMENT 3

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

April 17, 1984

Mr. Clair Fancy
DER
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

DER
APR 25 1984
BAQM

Dear Mr. Fancy:

Re: Completeness Review for the Application to Construct a New Air Pollution Source: Permit No. AC13-80716

In reply to your letter of February 3, 1984, the following information is offered in order to complete our application to construct a new air pollution source designated C-2, coater/laminator. In addition to information which you requested, I have several questions which are covered under the item number corresponding to each item in your letter.

1. Proprietary information is covered on a separate attached document to this letter.

2. We are presently negotiating an approved compliance schedule with the DER, and when complete will be submitted as per the requirements of FAC Rule 17-2.510(4) (b).

3. Potential emissions of all pollutants expected from the combustion of natural gas is re-submitted on a revised copy of page 5 of our application.

4. The BTU per cubic foot of the natural gas ranges from 1000 to 1050 at an annual average of 1025.

5. Answered as proprietary information attached.

6. Answered as proprietary information attached.

7. Answered as proprietary information attached.

continued...

8. Yes, we use solvent for cleaning all machines. The dirty solvent is reclaimed by distillation and reused. Loss to the atmosphere is small, probably less than 10 lbs. per day per machine. The approximately density of the reclaimed solvent is 7 lbs. per gallon.

9. Answered as proprietary information attached.

10. All waste inks, coating, adhesives and solvents were reclaimed or recycled by:

M & M Chemical Company
P.O. Box 291
Gadsden, Alabama 35912
EPA #ALD 0070513767
205-538-3800

The total quantity reclaimed was 344,575 lbs. which contained an estimated 60% VOC. We repurchased about 64,000 lbs as clean-up solvent of which only an estimated 10% might be loss to atmosphere. This loss would be for all presses and laminators and would not increase significantly with the addition of C-2. Sludge from reclaiming is the responsibility of M & M Chemical.

11. We do not believe this machine will generate any hazardous waste. Some flammable adhesive wastes in the past have been disposed of for us by:

Chemical Waste Management, Inc.
2700 N.W. 48th Street
Pompano Beach, Florida 33067
EPA #FLD 000776708

Our registration number is : FLD 004119251.

12. The amount of VOC loss or emitted to the atmosphere is estimated at 10% of the total based on EPA publications. The hourly amount is estimated and reported on the attachment.

13. See attached propriety information.

14. There will be no other VOC used in association with C-2 that has not been identified in this or previous reports.

15. Thru #17, the answer to all these questions is no.

18. No VOC add-on control will be used with C-2, we will achieve compliance using low solvent technology materials as specified in rule 17-2.

Sincerely,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals

Kenneth H. Speckhals
Technical Manager

KHS:gh

ATTACHMENT 4

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 14, 1984

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
P. O. Box 570370
Miami, Florida 33157

Re: Completeness Review for the Application to Construct a New Air Pollution Source: Permit No. AC 13-80716

Dear Mr. Speckhals:

The bureau has received your information dated April 17, 1984, in an attempt to answer the requests contained in our incompleteness letter dated February 3, 1984. The bureau still finds the referenced application package and supplemental data incomplete and the following information, including all assumptions and calculations, shall be submitted to the bureau before further processing will resume:

1. If there is any proprietary information required in any response(s) to the following requests, please identify and submit as a separate document and the bureau will maintain confidentiality.

2. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

3. Where you used the production data for the year 1982, submit the calculations for the production year 1983 in responding to the requests in the incompleteness letter sent to you dated February 3, 1984.

4. Since add-on control equipment is going to be installed to service all of the flexographic printing equipment, as stated in your letter dated January 30, 1984 (attached), calculate and submit the total potential pollutant emissions from these units.

5. Referencing #4, calculate and submit the potential pollutant emissions from all existing sources and per source at the facility in order to assess the total facility pollutant emissions.

6. Until #4 and #5 have been completed and submitted, it will be assumed that the existing facility is a major facility for the pollutant VOC (volatile organic compounds). Since the recent submittal of supplementary material dated April 17, 1984, indicated the new coater/laminator would have potential emissions of 57 TPY, which is greater than the significant level of 40 TPY, LAER shall be required. Therefore, submit your proposal for LAER for the coater/laminator designated C-2.

7. Submit the identity of each solvent used for cleaning purposes as purchased, quantify the daily and annual VOC emissions, and provide their density(ies) (as provided by the manufacturer).

8. In I.E.2.a. of your supplementary data, the total wt. % does not sum to 100% and the wt. % of VOC is indicated as 0 %. If this is in error, submit a correction.

9. Submit calculations for the numbers (underlined) contained in the following phrases of the supplementary data:

   - o I.E.2.a.: Applied at 1.9 lbs VOC per gallon
   - o I.E.2.b.: Applied at 5.31 lbs VOC per gallon applied including dilution and evaporative loss solvent.

10. From #9, define makeup solvent and evaporative loss solvent, and are they the same?

11. Identify each dilution solvent as purchased, quantify the potential pollutant emissions on a 24-hour and annual basis, and provide their density(ies) (as provided by the manufacturer).

12. Identify each evaporative loss solvent as purchased, quantify the potential pollutant emissions on a 24-hour and annual basis, and provide their density(ies) (as provided by the manufacturer).

13. Identify each makeup solvent as purchased, quantify the potential pollutant emissions on a 24-hour and annual basis, and provide their density(ies) (as provided by the manufacturer).

14. In #2 of the supplementary data, the calculated FIA limit of 25% LEL is based on what compound and submit the reference document?

15. What is the capture efficiency of the proposed control system? Quantify the capture efficiency. Show the calculations and assumptions.

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/BM/s

cc: N. Wright
T. Tittle
P. Wong
D. M. Ambrose

ATTACHMENT 5

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

DER

JUL 9 1984

BAQM

July 3, 1984

Mr. Clair Fancy
Department of Enviromental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Dear Mr. Fancy:

Re: Completeness Review for Application to Construct a New Air Pollution Source: Permit #AC-13-80716

In reply to your letter of May 14, 1984 the following information is offered to complete our application for C-2. Proprietary information will be covered in an attachment.

(1) We have completed negotiations on an approved compliance consent order and schedule whereby we will meet requirements of FAC rule 17-2.510(4) (b).

(2) Questions 3 through 15 are answered as proprietary on the attached page.

Sincerely,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals
Technical Manager

KHS:gh

cc: N. Wright (DER - Tallahassee)
T. Tittle - (DER - W. Palm)
P. Wong - (DERM)
D.M. Ambrose
J. Landers

ATTACHMENT 6

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 8, 1984

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Kenneth H. Speckhals
Technical Manager
Arnold Cellophane Corporation
20400 Southwest 112th Avenue
P. O. Box 570370
Miami, Florida 33157

Dear Mr. Speckhals:

Re: Completeness Review for the Applications to Construct Air Pollution Sources: AC 13-80716 and AC 13-79884

The department has received several documents related to the above referenced applications. The applications are still incomplete and further processing will resume when the following information has been received:

1. Submit an approved compliance schedule for meeting the requirements of FAC Rule 17-2.510(4)(b).

If there are any questions, please call Bruce Mitchell at (904) 488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: T. Tittle
P. Wong
N. Wright
D. Thompson
D. M. Ambrose

ATTACHMENT 7

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

October 25, 1984

DER

OCT 30 1984

BAQM

Mr. Bruce Mitchell
Department of Environmental Agency
Twin Towers Building
2600 Blair Stone Road
Tallahassee, FL. 32301

Dear Mr. Mitchell:

RE: TELEPHONE DISCUSSION ON APPLICATION TO CONSTRUCT/MODIFY AIR POLLUTION SOURCES: AC 13-80716, AND AC13-79884

As per our telephone conversation, I believe the following information will clarify several of my responses and calculations to the completeness reviews question asked in various letters from the Department.

1. Arnold Cellophane is classified as a major source of VOC. In 1983 our records indicated that we emitted:

	Tons/Year
Paper Coating:	617.1
Graphic Arts:	613.3
Total:	1230.4

I have re-estimated emissions of P-5 which is presently still under a construction permit, AC 13-55914, and which is to be modified by the installation of a Pillar catalytic incinerator, AC 13-80716.

2. Estimate of potential emissions of P-5 after control with incinerator:

P-5 is expected to account for one third of the total output of our printing when the controls are installed. We do not expect to see substantial increase in production as P-2 will either be retired or permitted to run low solvent compliance inks.

P-5 emissions without control:

613.3 tons/yr. *(1/3) = 204.2 tons/year.

After control we estimate a 70% average capture on P-5 and a 95% reduction efficiency of the incinerator.

204.2 tons/year - 95% * (204.2 tons/year * 70%) = 68.4 tons/year

continued...

Since the potential emissions of P-5 exceeds 40 TPY, we propose LAER is the add-on-control system we plan to install.

In order to clarify our estimate of potential emmission on C-2 (permit application AC 13-80716), I am re-submitting the data and method of calculation.

3. Potential Emission for C-2

A. Estimate of maximum units of production in reams(3000 $ft.^2$) per year coated with LST, compliance material at/or less than 2.9 lbs. VOC per gallon applied, less water.

The following forecast is based on historical and test data:

average line speed	@	350 fpm
average web width	@	3.33 ft.
% utilization	@	60%

To calculate annual reams per year:

350 ft./min * 3.33 ft. * (1/3000 $ft.^2$/ream)* 60 min/hr * 6000 hr/yr * 60% = **83,900 reams/year**

B. Calculate lbs. of VOC per ream allowed by rule where the average content of the paper coating material does not exceed 2.9 lbs. VOC per gallon applied.

The following calculations are based on averaging paper coating material used in 1983 of 5 machines (L-2, L-3, L-5, L-6 and C-1)

	1000 units
coating (gals.)	220.08
coating (lbs.)	1689.7
VOC (lbs.)	1237.3
VOD (gals.)	173.13
water (lbs.)	62.7
water (gals)	8.94
solids (lbs.)	385.6
ream produced	215 (estimated)

(1) density of solids

385.6 lbs. solid * (1/(220.08 - 173.3 - 8.94 gal) = 10.19 lbs. solid/gal.

(2) density of VOC

1237.3 lbs. * (1/173.3 gal) = 7.15 lbs. VOC/gal

(3) convert 2.9 lbs. VOC per gallon applied less water into lbs. VOC per ream.

2.9 lbs. VOC * (1/7.15 lbs/gal) = .4056 gal. VOC/gal applied

1.00 gal. applied - .4056 gal. VOC = .5944 gal. solids

0.5944 gal. solid * 10.19 lgs. solid/gal. = 6.057 lbs. solid/gal. applied

continued...

2.9 lbs. VOC * (1/6.057 lbs/gal) = 0.479 lbs. VOC/lb. solids

385.6M lbs. solid * (1/215M reams) = 1.79 lb. solid/ream

0.479 lbs. VOC/lbs. solids * 1.79 lb. solid/ream = .857 lbs. VOC/ream

C. Calculate potential annual emission after control of VOC at 2.9# VOC per gal. applied less water.

83,900 ream/yr. * .857 lbs. VOC/ream *(1/2000 lbs./ton)= 36.0 ton VOC/yr.

I hope the information provided will be what is needed to complete the permitting process. If you have any questions, please call me.

Sincerly,

Kenneth H. Speckhals

KHS:mrs

cc: N. Wright, DER Tallahassee
P. Wong, DERM
T. Tittle, DER, W. Palm Beach

ATTACHMENT 8

Arnold Cellophane Corporation 20400 Southwest 112th Avenue · PO Box 570370
Miami · Florida 33157

Telephone 305 238-5961 Telex 803360

November 2, 1984

Mr. Bruce Mitchell
DER
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Mitchell:

Per your request, I have calculated VOC, nitrogen oxide and sulfur dioxide burner emissions of our combined plant for 1983. P-5 and C-2 are not included in the usage.

In 1983 we used 1.468×10^7 ft^3 of natural gas at 1069 Btu/ft. (average) and operated about 6000 hrs.

Based on the API data in table 1.4 - 1 all of our natural gas burners emitted:

	Actual (TPY)	Potential (TPY)	Potential #/Hr.
VOC	.039	0.05	0.017
Nxo	.735	1.00	0.32
SO_2	.004	.005	0.002

With the addition of C-2 and P-5, we estimate that each machine will increase natural gas usage by 10% of the total and the potential emissions would be as follows:

Potential	C-2	P-5
VOC-TPY	0.005	0.005
VOC Lbs/Hr.	0.0017	0.0017
NxO TPY	0.100	0.100
NxO Lbs./Hr.	0.032	0.032
SO_2 TPY	0.0005	0.0005
SO_2 Lbs/Hr	0.0002	0.0002

Continued...

I hope this information is sufficient, please call me if you have any questions.

Sincerely yours,

ARNOLD CELLOPHANE CORPORATION

Kenneth H. Speckhals
Technical Manager

KHS:gh

ATTACHMENT 9

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Arnold Cellophane Corporation file

FROM: Bruce Mitchell

DATE: November 26, 1984

SUBJECT: Pollutant Emission Projections from Natural Gas Fired Driers/Heaters - based on AP-42 Emission Factors Table 1-4.1 and Kenneth H. Speckhals' letter, dated 11/2/84.

Natural Gas Usage per Year

Existing facility: 1.468×10^7 ft^3

C-2: 10% of existing facility

Pollutant Emissions

°Particulate matter (PM): 5 lbs/10^6 ft^3

Existing facility: 73.4 lbs/year = 0.04 TPY

C-2: 0.004 TPY

°Sulfur dioxide (SO_2) : 0.6 lb/10^6 ft^3

Existing facility: 9 lbs/year = trace

C-2: trace

BM/rw