



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

April 26, 2002

David B. Struhs
Secretary

CERTIFIED MAIL – Return Receipt Requested

Mr. John C. Folks
Environmental Administrator
Florida Department of Agriculture and Consumer Services
DACS Office of Agriculture Water Policy
1203 Governor's Square Boulevard
Tallahassee, Florida 32301

Dear Mr. Folks:

RE: Temporary Air Operation Permit No.: 0930111-001-AO
Limited Authorization to Conduct a Feasibility Study on the Use of an Air Curtain Incinerator (ACI)
to Burn Diseased Animals

The Department has reviewed the application request provided on April 18, 2002 (date the processing fee money transfer was received). We have considered the Department's legal authority to allow the Florida Department of Agriculture and Consumer Services, Division of Forestry, to conduct a feasibility study on the use of an ACI to burn diseased animals. Since it has been alleged that the burying of animals will lead to ground water contamination, the purpose of the demonstration tests is to see if diseased animals can be properly incinerated in an ACI, instead of burying them. The animals to be tested in this demonstration are cows and chickens. The location of the test burn demonstrations will be at Mr. Larry Lorenz' property located at 30653 Center Avenue, North, Fort Drum, Okeechobee County. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. Rule 62-256.600(1), Florida Administrative Code (F.A.C.), authorizes the Department to determine if open burning (in this case, the use of an ACI) is the only feasible method of operation to get rid of diseased animals "when an emergency exists which requires immediate action to protect human health and safety."

In accordance with the provisions of Paragraph 403.061(18), F.S., and Rule 62-256.600(1), F.A.C., you are hereby authorized to conduct the feasibility demonstration tests. The demonstration will include; 1) the burning of several cows, in order to determine the timeframe it takes to completely destroy the animals by burning them in an ACI; and, 2) the burning of several chickens, in order to determine the timeframe it takes to completely destroy the animals by burning them in an ACI.

The demonstration tests shall be subject to the following conditions:

1. Unless waived, the permittee shall notify the Department's Southeast District and Bureau of Air Regulation at least seven (7) days prior to the commencement of the demonstration tests. A copy of any written report shall be provided to the Department's Bureau of Air Regulation.

"More Protection, Less Process"

Printed on recycled paper.

2. The total limited timeframe authorized for the demonstration is 14-days, which are consecutive and starts on the initiation of the first test demonstration. If additional time is needed, the permittee shall provide the Department with documentation of the progress accomplished to date and shall identify what is left to be done to complete any additional testing, measurements, and/or monitoring.
3. The demonstration tests shall be conducted while the ACI is being properly operated and in accordance with the manufacturer's specifications and/or guidelines.
4. The ACI shall be operated such that the integrity of the air curtain is properly maintained and allowed to be broken only when the ACI is being charged with more animals and/or fuel. Nothing shall be allowed to protrude through the air curtain during operation.
5. The release of objectionable odors pursuant to Rule 62-296.320(2), F.A.C., is not authorized for this activity.
6. Demonstration testing shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to the public health or welfare. Demonstration testing shall not resume until appropriate measures to correct the problem have been implemented.
7. There will be no visible emissions testing required; in addition, there are no pollutant emissions testing required.
8. The demonstration tests and monitoring of operation shall be under the direct supervision and responsible charge of a professional engineer registered in Florida. In this case, the P.E. of Record is Mr. Steve Smallwood, Air Quality Services.
9. This Department action is to only authorize the demonstration testing and operation monitoring for the purpose of burning cows and chickens in an ACI for the timeframe established in Condition #2, above.
10. Complete documentation of the activity shall be kept on file for future reference and use.
11. The Department shall be notified in writing on the date of the last demonstration test completion. If after work hours, notification shall occur on the next work day.
12. The ACI should be slightly tilted away from the doors to prevent any leakage of any liquid materials.
13. For safety and security reasons, the following persons must be notified to gain permission to attend and observe any demonstration tests:

Mr. Frank LeTeux, Project Officer
FDACS
1203 Governor's Square Blvd.
Tallahassee, Florida 32301
Telephone: 850/414-0200
Cell Phone: 850/591-8760
Fax: 850/921-2153
E-mail: leteuxf@doacs.state.fl.us

Mr. Steve Smallwood, P.E. of Record
Air Quality Services
1640 Eagles Landing, Unit 103
Tallahassee, Florida 32308-1560
Telephone: 850/385-0002
Cell Phone: 850/570-5177
Fax: 850/385-8715
E-mail: ssm97@comcast.net

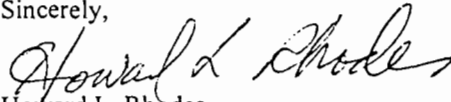
Mr. John C. Folks
FDACS
Page 3 of 3

14. Attachment Section.

- a. Application request received April 16, 2002, from Mr. Steve Smallwood, P.E., that was hand delivered, but without the processing fee.
- b. Processing fee money transfer received April 18, 2002.

The Department has relied on the information referenced in the Attachment Section and conversations with representatives of the Florida Department of Agriculture and Consumer Services and Division of Forestry, and Mr. Steve Smallwood, P.E., Air Quality Services (P.E. of Record), in authorizing this activity.

Sincerely,



Howard L. Rhodes

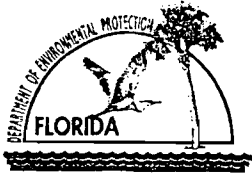
Director

Division of Air Resource Management

HLR/rbm

Enclosures

cc: Clair Fancy, DEP - BAR
Scott Sheplak, DEP - BAR
Tom Tittle, SED
Frank LeTeux, FDACS
Steve Smallwood, P.E., AQS
Bruce Mitchell, DEP - BAR



Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT – NON TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Florida Department of Agriculture and Consumer Services	
2. Site Name: Larry Lorenz Ranch	
3. Facility Identification Number: <input checked="" type="checkbox"/> Unknown	
4. Facility Location: Street Address or Other Locator: 30653 Center Avenue, North City: Fort Drum County: Okeechobee Zip Code: 34972	
5. Relocatable Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Existing Permitted Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Application Contact

1. Name and Title of Application Contact: John C. Folks, Environmental Administrator	
2. Application Contact Mailing Address: Organization/Firm: DACS Office of Agriculture Water Policy Street Address: 1203 Governor's Square Blvd City: Tallahassee State: FL Zip Code: 32301	
3. Application Contact Telephone Numbers: Telephone: (850) 414 - 9928 Fax: (850) 921 - 2153	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	<i>4-18-02</i>
2. Permit Number:	<i>0930111-001-A0</i>
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Stephen Smallwood, PE, Air Quality Services – Final Version

Monday, April 16, 2002

AQS File:
C:\AQServices\Projects\930_FL_DACS_Water_Policy\ACI_Demo_Project_Infected_Animals\Air_App_Special_DACS_ACI_Test_Burn_0416_Fn.doc

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- [] Initial Title V air operation permit for an existing facility which is classified as a Title V source.
- [] Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

- [] Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit number to be revised: _____

- [] Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected: _____

- [] Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised: _____

Reason for revision: _____

Air Construction Permit Application

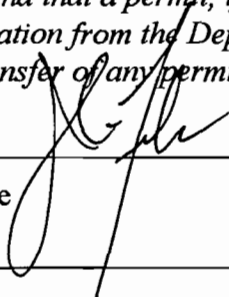

This Application for Air Permit is submitted to obtain: (Check one)

- [] Air construction permit to construct or modify one or more emissions units.
- [] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- [] Air construction permit for one or more existing, but unpermitted, emissions units.

Air Open Burning Permit Application

- [X] Temporary Air Open Burning Permit pursuant to paragraph 403.061(18), FS, Research, and Rule 62-256.256.600(1), Emergency Response.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: _____ John C. Folks, Environmental Administrator
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: DACS Office of Agriculture Water Policy Street Address: 1203 Governor's Square Blvd City: Tallahassee State: FL Zip Code: 32301
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (850) 414 - 9928 Fax: (850) 921 - 2153
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative (check here [X], if so) or the responsible official (check here [], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i> _____ Signature  _____ Date  _____

Professional Engineer Certification

1. Professional Engineer Name: Stephen Smallwood, PE Registration Number: 26 630
2. Professional Engineer Mailing Address: Organization/Firm: Air Quality Service Street Address: 1640 Eagles Landing, Unit 103 City: Tallahassee State: FL Zip Code: 32308-1560
3. Professional Engineer Telephone Numbers: Telephone: (850) 385-0002 Fax: (850) 385-8715

DACS Office of Water Policy
Okeechobee County ACI Infected Animals Test Burn
Special Research Emergency Response ACI Permit

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

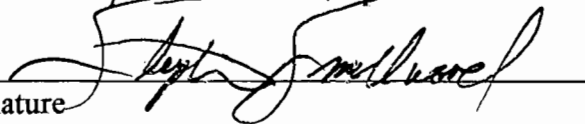
(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [NA], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [NA], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [NA], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature
(seal)



Date

April 16, 2007

* Attach any exception to certification statement.

[See Application Comment]

Construction/Modification Information

1. Description of Proposed Project or Alterations:

An air curtain incinerator (ACI) will be used in a remote area to test burn dead cattle and poultry, to determine if the use of an ACI, with and without supplemental gelled diesel fuel, is a safe and effective way of cremating infected animals in an emergency situation to stop the spread of disease and protect both livestock and public health.

During the test burns that will be conducted with a five-day period, the DACS project manager (Frank Leteux), the ACI provider/operator (Gary Ford), and the permit certifying PE (Steve Smallwood) will be onsite to supervise the conduct of the test burns. A test burn will not proceed until all three agree that the ACI is ready, the test carcasses are properly prepared and ready to be loaded into the ACI unit, and it is safe to proceed. If at any time, during a test burn, any one of the three determine that the operation is (or is becoming) unsafe, the test burn will be terminated as quickly and as safely as possible. During some of the test burns, special emissions tests may be conducted. If so, the test supervisor will participate in the decision to initiate and terminate the test burn.

The ACI will be properly operated and never over-loaded at any time during any of the test burns. The ACI will be sloped to contain all fluids that may accumulate in the ACI to prevent any ground contamination.

See the attached test burn project description for a more detailed description of the planned test burns.

2. Projected or Actual Date of Commencement of Construction:	NA
3. Projected Date of Completion of Construction:	NA

Application Comment

This is a special air open burning permit application. The PE certification that applies to Chapter 403 F.S. air construction and air operation permit applications does not apply to this application.

The first paragraph of the standard PE certification does generally apply: *"(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection."*

The second paragraph of the standard PE certification does not apply in this case because no emissions estimates are required or provided as part of this research testing application. The test may result in data that will be useful in developing emissions estimates for this kind of burning in the future.

The remaining provisions of the standard PE certification only apply to Chapter 403 F.S. air construction and air operation permit applications.

I have reviewed the plans for the test burns with the DACS project manager and the ACI provider/operator. Animals have been safely burned in ACI's using clean dry wood fuel, and on the ground with gelled fuel. One or more of the test burns of this project will test the use of gelled fuel with clean dry wood in an ACI. I have concluded that the test can be conducted safely and the use of gelled fuel may be a quick and effective way of cremating infected animals in emergency situation, The ACI will not be over-loaded with carcasses during the tests.

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0850001-005-AC (PSD-FL-146G)

Florida Power & Light Martin Plant
Inlet Fogger Project
Martin County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD permit modification to Florida Power & Light (FP&L). The permit is to install foggers at the compressor inlets of four natural gas and No. 2 fuel oil-fired General Electric PG7221FA combined cycle combustion turbine-electrical generators at the Martin Plant in Martin County. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. The applicant's name and address are Florida Power & Light, Post Office Box 176, Indiantown, Florida 34956.

The primary movers are the combustion turbines, which are typically nominally rated by General Electric at approximately 160 MW at 59 degrees when firing gas. The combustion turbines (exclusive of the steam cycle) normally achieve their maximum rated output of approximately 170 MW on cold (32 degrees) days because the greater compressor inlet air density allows greater throughput in the rotor or expansion section of the combustion turbine. The maximum power output is only about 140 MW on hot (95 degrees) days because of the lower compressor inlet air density. The foggers can increase hot-day power output (under very dry conditions) by as much as 14 MW per combustion turbine, thus almost restoring the units to their nominal rating. Under the design conditions for this Florida site (95 degrees and 50 percent humidity), an improvement of about 7 MW per combustion turbine can be expected.

The foggers provide no benefit under humid or cold (less than approximately 50 degrees) conditions and will not be used when they occur. The maximum output of approximately 170 MW will continue to occur at low ambient temperature. The result is that maximum hourly emissions will not increase although actual annual emissions will increase within their permitted limits because more fuel will be used on hot, relatively dry days.

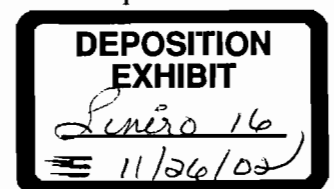
Although the number of days during which the foggers can economically operate probably limits emissions increases to levels below significance for the purposes of PSD applicability, FP&L proposes enforceable conditions to insure non-applicability. FP&L asserts and the Department accepts that the modification will not cause any meaningful change in the actual hours of operation of these combined cycle units. The units are allowed to operate continuously and already have a very high availability factor. The maximum increase in annual emissions caused by the project in tons per year is summarized below along with the PSD-significant levels.

<u>Pollutants</u>	<u>Annual Emission Increase</u>	<u>PSD Significant Levels</u>
PM/PM ₁₀	4	25/15
SO ₂	34	40
NO _x	38	40
VOC	1	40
CO	18	100

An air quality impact analysis was not required or conducted. No significant impacts are expected to occur as a result of this project. It will not cause or contribute to a violation of any ambient air quality standard or increment.

The Department will issue the FINAL permit modification with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of "Public Notice of Intent to Issue a PSD Permit Modification." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public



inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station # 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file 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:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Department of Environmental Protection
Southeast District Office
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: 561/681-6600
Fax: 561/681-6790

The complete project file includes the application, technical evaluation, Draft PSD Permit Modification, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. Applicant

Florida Power & Light
Environmental Services Department
700 Universe Blvd
Juno Beach, Fl 33408

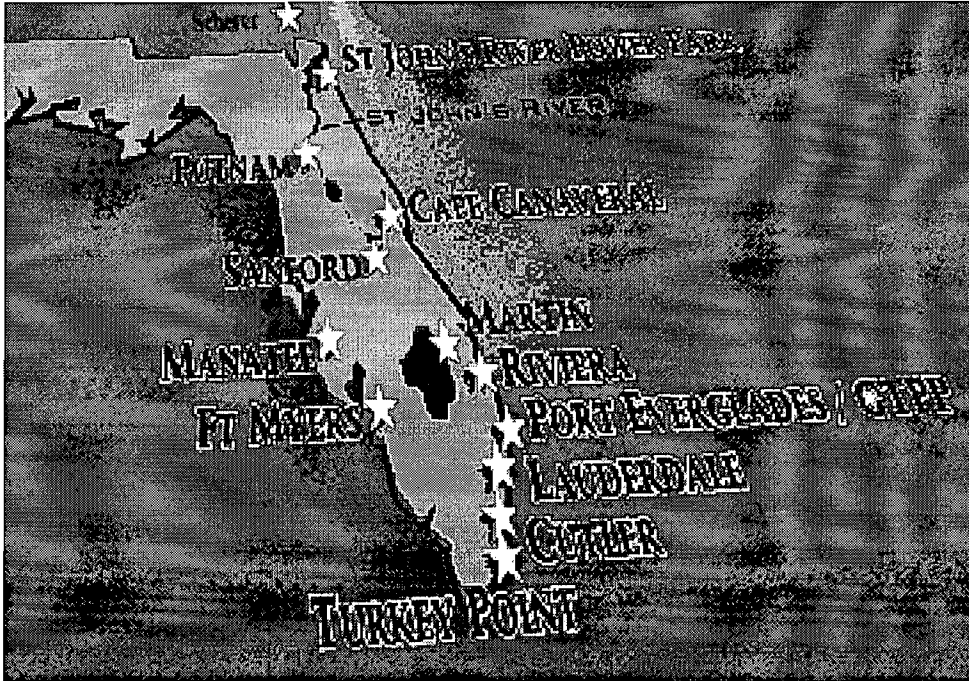
Authorized Representative: John Lindsay, FP&L Martin Plant General Manager

2. Source Name and Location

FP& L Martin Plant
Post Office Box 176
Indiantown, Florida 32956

UTM Coordinates: Zone 17, 543.2 km East and 2993.0 km North

The plant is located 7 miles North of Indiantown, Martin County. The location the Martin Plant within the FP&L system is shown below followed by a photograph of the site downloaded from the FP&L website:



3. Source Description

The Florida Power & Light (FP&L) Martin Plant consists of two oil and natural gas fired conventional steam generating stations, and two oil and natural gas fired combined cycle units. In addition, the facility includes one auxiliary boiler, and two diesel generators (one unregulated). Also included in this permit are two unregulated emissions units identified as facility-wide particulate matter emissions and facility-wide VOC emissions. Based on the Title V application, this facility is a major source of hazardous air pollutants (HAPs).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Each conventional steam unit has the maximum capacity of 863.3 megawatts (MW) and consists of a boiler/steam generator which drives a single reheat turbine generator, and is equipped with low NO_x dual fuel firing burners to reduce emissions of nitrogen oxides; and, multicyclones, with fly ash reinjection, to control particulate matter emissions. In addition, the units have a continuous emission monitoring system for measuring opacity, NO_x, and sulfur dioxide. Unit 1 (ARMS Emission Unit 001) commenced commercial operation in December 1980. Unit 2 (ARMS Emission Unit 002) commenced commercial operation in June 1981.

Each combined cycle unit consists of two General Electric PG7221FA combustion turbine-electrical generator with unfired heat recovery steam generators. A single steam electrical turbine serves each combined cycle unit. Each combined cycle unit has a net hot weather capacity of roughly 400 MW. Nitrogen oxide emissions are controlled by dry low NO_x (DLN-2) combustors for natural gas with steam injection for fuel oil firing. Based on information contained in the Title V Permit Application, only natural gas has been fired in the units to date. Units 3A and 3B (ARMS Emissions Units 003 and 004) commenced commercial operation in February 1994. Units 4A and 4B (ARMS Emissions Unit 005 and 006) commenced commercial operation in April 1994.

4. Current Permit and Major Regulatory Program Status

Construction of the Martin Power Plant Units 1 and 2 was authorized by the Department under permits AC43-4037 and 4038. Units 3 and 4 were authorized under Site Certification PA89-27 and Permit.PSD-FL-146.

The facility operates under Title V Air Operation Permit No. 0850001-004-AV issued in June 1998. This facility is a major source of hazardous air pollutants (HAPs) based on information submitted in the Title V application.

The combustion turbines are subject to 40 CFR 60, Subpart GG, Standards of Performance for New Stationary Gas Turbines. The combined cycle units and the fossil fuel steam generators are regulated under the Title IV of the Clean Air Act, Acid Rain, Phase II.

5. Permit Modification Request

On March 29, 1999 the Department received a request from FPL for modification of its permits to install direct water spray fogging systems in the inlet ducts of Combustion Turbines (CT) 3A/B and 4A/B (ARMS Emissions Units 003 through 006). The project is a performance enhancement that can improve both the turbine power output and the heat rate of the unit. The principle is based on evaporative cooling of the incoming, filtered, ambient air to lower its temperature and increase its density.

The individual combustion turbines are typically rated by General Electric at approximately 160 MW each at 59 degrees when firing gas. The combustion turbines (exclusive of the steam cycle) normally achieve their maximum rated output of approximately 170 MW on cold (32 degrees) days because the greater compressor inlet air density allows greater throughput in the rotor or expansion section of the combustion turbine. The maximum power output is only about 140 MW on hot (95 degrees) days because of the lower compressor inlet air density. The foggers can increase hot-day power output (under dry conditions) by around 15 MW, thus almost restoring the units to their nominal rating. The foggers provide no benefit under humid or cold (less than approximately 50 degrees) conditions and will not be used when they occur. The maximum output of approximately 170 MW will continue to occur at low ambient temperature.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Inlet foggers are routinely included in new combustion turbine projects and have not affected the Department's decisions regarding Best Available Control Technology.

6. Emissions Increases Due to Modification/Method of Operation

The foggers are physical pieces of equipment whose addition and use can increase emissions on hot or dry days. The use of the foggers can also be considered a change in method of operation of the inlet "air conditioning system" that is already used to filter incoming air.

Assuming a design condition for Florida of 95 degrees (°F) and 50 percent (%) relative humidity, evaporative cooling to the point of saturation of the incoming gas stream results in a temperature decrease of approximately 16 °F to 79 °F. This represents an increase of roughly 5% in power output or on the order of 7 MW per unit. Under average annually averaged conditions, the reduction typically possible is on the order of 5.5 °F, with an associated power increase of about 3 MW.

Refer to attached Heat Input versus Ambient Temperature Curve. FP&L estimated that that heat input to each combustion turbine will increase by approximately 4.7 mmBtu per hour per degree of temperature reduction (mmBtu/hr/°F) by evaporative cooling. If emissions rates are known in terms of pounds per mmBtu (lb/mmBtu), the increase on hourly emissions can be estimated.

FP&L assumed that each unit will be operated 6240 hours per year gas and 125 hours on oil with the fogger on and that the average temperature decrease will be 5.5 °F when the foggers are on. Annual emissions are estimated as detailed in the following table.

TOTAL EMISSIONS INCREASES DUE TO USE OF INLET FOGGERS AT FOUR UNITS

Pollutant	Emission Rate lb/mmBtu (gas)	Emission Rate lb/mmBtu (oil)	Emission Increase ton/yr (gas)	Emission Increase ton/yr (oil)	Annual Increase tons/yr (Oil & Gas)	PSD Threshold tons/yr
NO _x	0.0900	0.2497	29.04	9.39	38.43	40
PM/PM ₁₀	0.0092	0.0328	2.95	1.23	4.19	25/15
CO	0.0480	0.0573	15.47	2.15	17.63	100
VOC	0.0015	0.0060	0.491	0.22	0.72	40
SO ₂	0.0465	0.4984	15.01	18.74	33.75	40

Source: Application and additional information submitted on March 29 and May 7, 1999 respectively.

Limiting each unit to 6240 hours of operation on gas and 125 hours of operation on oil will not effectively insure that annual emissions increases will not exceed the values given above. This is because the hours of operation will be chosen with a bias toward the days when the possible temperature decrease is greater than 5.5.

To insure enforceability of a limit on annual emissions increases, FP&L proposes to limit the annual "degree-hours (°F-hr)" that the foggers operate. Degrees during a given hour can be calculated by measuring the temperature difference between the ambient and cooled air, while hours are easily documented. These values can be integrated over a year to calculate annual degree hours. Actual annual °F-hr can be directly multiplied by the lb/mmBtu of each pollutant and the 4.7 mmBtu/hr/°F factor and converted to tons to calculate actual annual emissions increases.

The emissions increases calculated are the direct result from the physical change in or change in method of operation such as is the installation of the inlet foggers. These assume that the ability to

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

achieve greater power output when the foggers are used does not result in emissions increases outside the turbines original power curve. The rationale is discussed below.

The emissions characteristics (GE performance curves) do not change as a result of the use of the foggers from what would normally occur throughout the entire range of temperatures and relative humidity. Rather, the foggers move the operating points along the same curve toward the power and emissions that normally occur at lower temperatures. The worst case emissions scenario will still occur during the winter months and will occur with the foggers off. According to GE (reference: Brooks, 1996), evaporative cooling is limited to ambient temperatures of 59 °F and above because of the potential for icing the compressor.

7. Evaluation of PSD Applicability

As a major source, a modification or change in method of operation of CTs 3A&B and 4A&B resulting in **significant net emissions increases** is subject to PSD review. Significant net emissions increase is defined in Rule 62-212.400, F.A.C as follows:

*Significant Net Emissions Increase – A significant net emissions increase of a pollutant regulated under the Act is a **net emissions increase** equal to or greater than the applicable significant emission rate listed in Table 212.400-2, Regulated Air Pollutants – Significant Emission Rates.*

The significant emission rates are included (see PSD Threshold) in the Table above. The meaning of a net emissions increase is given in Rule 62-212.400, F.A.C. as:

*Net Emissions Increase - A modification to a facility results in a net emissions increase when, for a pollutant regulated under the Act, the sum of all of the contemporaneous creditable increases and decreases in the **actual emissions** of the facility, including the increase in emissions of the modification itself and any increases and decreases in quantifiable fugitive emissions, is greater than zero.*

The definition of actual emissions is given in Rule 62-210.200, F.A.C. (definitions) as follows:

Actual Emissions - The actual rate of emission of a pollutant from an emissions unit as determined in accordance with the following provisions:

- (a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.*
- (b) The Department may presume that unit-specific allowable emissions for an emissions unit are equivalent to the actual emissions of the emissions unit provided that, for any regulated air pollutant, such unit-specific allowable emissions limits are federally enforceable.*
- (c) For any emissions unit (other than an electric utility steam-generating unit specified in subparagraph (d) of this definition) which has not begun **normal***

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

operations on a particular date, actual emissions shall equal the potential emissions of the emissions unit on that date.

- (d) *For an electric utility steam generating unit (other than a new unit or the replacement of an existing unit) actual emissions of the unit following a physical or operational change shall equal the representative actual annual emissions of the unit following the physical or operational change, provided the owner or operator submits to the Department on an annual basis, for a period of 5 years representative of normal post-change operations of the unit, within the period not longer than 10 years following the change, information demonstrating that the physical or operational change did not result in an emissions increase. The definition of "representative actual annual emissions" found in 40 CFR 52.21(b)(33) is adopted and incorporated by reference in Rule 62-204.800, F.A.C.*

The term electric utility steam-generating unit is defined as:

Electric Utility Steam Generating Unit – Any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the unit.

Based on Department records, actual hours of operation since 1993 are as follows:

Unit/Year	Annual Operating Hours 1993 - 1998					
	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
3A (003)	786	7554	8334	7977	8121	8067
3B (004)	804	7789	8172	8281	8551	8301
4A (005)	91	5181	5974	8305	8243	8417
4B (006)	91	6780	8315	8310	8254	8345

As expected, there was a rapid increase in annual hours of operation after these very efficient units were installed in 1993. Their operation can presently be characterized as "baseload." The foggers will be allowed to operate continuously but will be limited in terms of "degree-hours." As previously mentioned, if the average temperature drop is in fact 5.5 °F, they can operate 6240 hours on gas and 125 hours on oil each.

The combustion turbines have clearly begun *normal operation*. As modern combined cycle units, they are very efficient in comparison with conventional boiler-based steam-electrical units. Each combustion turbine-electrical generator produces 160 MW (nominal) of electrical power excluding the power produced through the steam cycle. The steam cycle associated with each combustion turbine, including the unfired HRSG and steam turbine-electrical generator produces about 70 MW (well in excess of 25 MW) so that the units are clearly steam electrical units. Therefore, the correct approach to determine the magnitude of a net emissions increase is to compare actual emissions from preceding years with representative actual annual emissions as described for steam electrical units.

FP&L asserts and the Department accepts that use of the inlet foggers will not affect the hours of operation of the units. As mentioned previously, they are already baseload units and any downtime is more likely due to maintenance than to demand. Most likely the Martin combined cycle units will

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

continue their normal baseload operation within the recent historical hours per year per unit. The emissions are directly related to the hours of operation.

The modification project can be isolated from the normal operation of the units and its effects can be directly predicted and measured without having to make annual comparisons of actual emissions from the combined cycle units before and after the change. The modification itself (i.e. installation and operation of the foggers), however, has not yet begun normal operation. The future actual emissions caused by the modification are equal to the potential-to-emit, which is based on the increases in heat input associated with the use of the fogging system.

The number of days during which the foggers can economically operate probably limits actual emissions increases to levels below significance for the purposes of PSD applicability. However, FP&L proposes to limit operation of the foggers to the equivalent of 6240 (gas) and 125 (oil) hours per combustion turbine per year on the basis of a 5.5 °F average compressor. This equates to 34,320 °F-hr on gas and 4000 °F-hr on oil per combustion turbine. If, for example, the average temperature drop is actually 11 °F, the foggers will only be allowed to operate half as many hours as the base case. Emissions will increase under these limitations (as previously tabulated) by levels less than the significant emissions rates. The Department concludes, therefore, that PSD does not apply to this project.

8. Proposed Addition of New Conditions to Power Plant Siting Certification No. PA 74-01 and PSD-FL-146

The combustion turbines were constructed under the authority of the Power Plant Siting Certification No. PA89-27 issued on 2/20/91. These conditions of certification PA 89-27 were been modified on 2/20/91, 9/28/94 and 9/06/96. The Department will amend PSD-FL-146 and the conditions of certification by adding a new condition authorizing installation and operation of the inlet foggers.

The new condition applicable to the inlet foggers proposed for CTs 3A&B and 4A&B (ARMS Units 003-006) are shown in the draft PSD permit modifications. It limits operation of each inlet fogger to 34,320 °F-hr on gas and 4000 °F-hr on oil. Monitoring and compliance procedures are included to insure the temperature drop and hours of operations are properly measured, documented and reported.

9. Conclusions

The project will not increase the maximum short-term emission rates as these are already achieved under natural conditions of low ambient temperatures without the use of the foggers.

The Department concludes that PSD is not applicable to this project since this project as presented will not result in significant net emissions increase to major facility. The changes will not cause a significant impact or cause or contribute to a violation of any ambient air quality standard or PSD increment.

The Department's conclusion does not set a precedent for projects implemented at any facilities other than combined cycle unit inlet fogger installations. It does not set precedents related to any physical changes within the compressors, combustors, rotors, or other key components at such units. The application and determination of the Department's rules does not constitute an interpretation of the EPA rules under 40CFR52.21, Prevention of Significant Deterioration or 40CFR60, New Source Performance Standards.

For further details regarding this review, contact:

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

*A.A. Linero, P.E. Administrator
Teresa Heron, Review Engineer
New Source Review Section
Bureau of Air Regulation
850/488-0114*



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

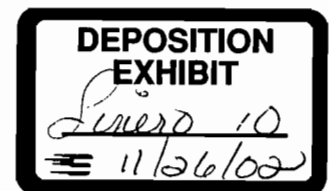
David B. Struhs
Secretary

July 15, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Lindsay
Plant General Manager
Florida Power & Light
Post Office Box 176
Indiantown, Florida 34946-0176

Re: DEP File No. PSD-FL-146(G) and 0850001-005AC
Inlet Foggers Project - Martin Power Plant



Dear Mr. Lindsay:

The Department reviewed your request to modify the PSD Permit to authorize the installation of inlet foggers on the four General Electric PG7221 combustion turbine-electrical generators (Combustion Turbines 3A&B, 4A&B). The request is acceptable as detailed in the Department's Technical Evaluation and Preliminary Determination.

PSD-FL-146 permit is hereby modified as follows:

Inlet Fogger Installation

Inlet foggers may be installed on Units CT3A, CT3B, CT4A and CT4B. Operation of the foggers on each unit may not exceed the following limits: 181,661 degree F-hours in aggregate firing natural gas fuel if no distillate fuel is fired. If distillate oil is fired in any of the GT's during a calendar year, the allowable degree F-hours for natural gas shall be decreased by 2.77 degree F-hours for every hour operated on distillate oil fuel. No GT may exceed 4,000 degree F-hours per year firing distillate oil fuel.

The temperature drop across the inlet foggers shall be monitored whenever water is injected at the foggers and hourly average temperature drops shall be calculated and recorded automatically using computer system. The product of each hour of fogger operation and the average temperature depression for that hour shall be summed for each calendar year and shall be submitted to the DEP SE District Office with the Annual Operating Report. The temperature monitoring system shall be calibrated annually in accordance with Guidance Document No. DARM-EM-03 (attached).

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes. Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by the filing of a Notice of Appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000,

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Mr. John Lindsay
July 15, 1999

and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within (thirty) days after this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Sincerely,



Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/aal

Enclosures

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this PSD PERMIT MODIFICATION was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 7-20-99 to the person(s) listed:

John Lindsay, FP&L*
Richard G. Piper, FP&L
Ken Kosky P.E., Golder Associates
Isidore Goldman, SED
John Bunyak, NPS
Gregg Worley, EPA

Clerk Stamp

FILED AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52,
Florida Statutes, with the designated Department
Clerk, receipt of which is hereby acknowledged.

Ken Jones 7-20-99
(Clerk) (Date)

ATTACHMENT

DACS Office of Water Policy

Okeechobee Animal Disposal Demonstration

ACI

Test Burn Plan

Scope of Work for Animal Mortality Disposal

INTRODUCTION

The risk of an epizootic disease spreading from one farm to another continues to concern animal health officials, farmers, producers, and consumers. Livestock disease outbreaks can adversely affect the industry in an area by easily reversing gains in production achieved after years of work and investment. Animal diseases spread in many ways some diseases are so insidious that veterinary health managers may not be able to react until after the disease is well established over a wide area.

The history of animal disease outbreak events associated with ease of travel and transportation requires detailed emergency preparedness plans to diagnose, control, and eradicate these diseases before they can spread. Past experience with disease outbreaks in livestock has demonstrated the need for carcass disposal methods that are safe, fast, complete, and environmentally acceptable. Some of the more traditional methods used for the disposal of diseased animal carcasses include: on-farm burial, composting, open burning, burial in public garbage landfills, and rendering. Some of these methods have been very useful for disposing of small numbers of animal carcasses. However, their use for the disposal of large numbers of carcasses may result in an increased disease risk to other livestock in an area. The short-term savings from traditional methods can easily result in an increased cost later on, which could have been reduced or eliminated if the right techniques had been used initially. Composting is a method that has gained a lot of attention in recent years. It provides a very promising option for disposing of small numbers of diseased animal carcasses. In large herds or flocks, composting should be carefully considered because of the potential risks of disease spread by wild and feral animals and ground water contamination. If well-planned and rehearsed emergency preparedness programs are not implemented when epizootics or other emergencies occur, the environmental risks and costs may be disastrous. Producers and consumers would likely be the most affected during a major disease occurrence. The proper disposition of diseased and/or condemned herds in either large-scale emergency programs or less dramatic long-term programs is complex.

PROJECT GOALS

Many methods have been considered for disposition and found cost prohibitive because of fuel costs. The primary reasons for performing this demonstration project is to evaluate procedures, costs and processes not previously utilized, specifically the utilization of gelled fuel. Two separate methods have been economically viable and not time restrictive. One is the burning with cord wood in air burners as exhibited by the disposal of 200,000 cows in England. Another is open burning on gel fuel saturated dirt as conducted by Dr. Anderson in Reno on 3,000 infected sheep with gelled diesel utilizing gelled diesel applied with a machine called TerraTorch to saturate and ignite the carcasses. In this test, a combination of these two methods will be utilized. Increased burn times, hotter temperatures, contained residuals, and portability are anticipated to be demonstrated for the disposal of large numbers of poultry and dairy cows.

ENVIRONMENTAL ASSESSMENT

The selected incineration site (Larry Lorenz property) is located approximately 20 miles north of the town of Okeechobee, Fl. The farm is completely fenced with locked gates into the property. The security provided by fencing and the isolation of the site was the primary considerations when selecting the farm as a site for the animal carcass disposal incineration test. The topography of the Fort Drum site provides some of the higher elevations in the Okeechobee area providing maximum depth to ground water and surface water thus reducing any potential impact. The Air Curtain Incinerator will be positioned with a slope to contain any fluids that may accumulate in the Incinerator to prevent contamination of the ground.

INCINERATION EQUIPMENT UTILIZED

The Air Curtain Incinerator System, Portable Model S-121, is a completely self-contained unit designed to destroy trees and other wood materials in a safe controlled burning process. The unit is powered by a diesel engine that drives a 15,000 CFM centrifugal caged fan. Air is forced out of a patented distribution manifold. The manifold is 21 ft long to fit the fire box. Air speed can be adjusted up to 165 MPH by regulating engine RPM's depending on the need. The airflow is forced across the top and angled downward into the firebox. The 165 MPH air curtain swirls into the box increasing combustion efficiency and the burning rate because of the increased oxygen being fed to the fire and the greater air turbulence. The process tends to confine the resultant smoke under the air curtain until it is completely consumed by the intense temperatures and provides 4-6 times faster burning rate than with an open fire and uses less fuel. One additional equipment operator is required to add wood to the box. Temperatures produced in the burn area, depending on the fuel source, range from 1,800 degree F-2, 800 degree F . Fuel sources such as coal, hard woods, and injected fuel oil would generate significantly higher burn temperatures. The proposed experimental project will utilize cordwood and gelled diesel with a rating of up to 143, 000 BTUs/gallon (a fuel not previously tested in a air curtain incinerator). The 360-degree air rotation in the air curtain incinerator results in an increased oxygen flow and creates an afterburner effect. This effect is like an exhaust scrubber on an emissions smokestack. The recirculating air under the top air curtain provides enough time for organic compounds to be completely burned with very little smoke or ash escaping into the air above. The capability for adding additional fuel during the incineration process is critical for maintaining high burn temperatures. This evaluation and other tests of the air curtain incinerator system will provided the following distinct advantages over open burning or normal incineration of large and small animal carcasses:

- High incineration efficiency
- Low cost carcass disposal
- Portability of air curtain incinerator, Model S-Series
- Rapid incineration of animal carcasses
- Reduced emissions such as smoke and ash
- High heat temperatures forced up and away from equipment and operators
- Environmentally acceptable (No potential discharge to ground/surface waters.)

Complete disposal of carcasses (Reduced to two percent of original volume and weight and sterilization of pathogens)

INCINERATION EFFICIENCY FACTORS

Fire Start-up

Previous tests have shown that a fire with peak temperatures of approximately 1,800 degree F can be reached in one hour using relatively dry wood, i.e., less than 30% moisture. However, 1 to 2 hours may be required to reach the same temperature when the wood moisture content is greater than 50%. In all fire start-up operations diesel fuel will be used to completely saturate the kindling and wood prior to adding the warning flare. A warning flare is suggested to start the fire for safety reasons. After about 15 minutes the fire combustion should be distributed across the box so that the air curtain incinerator fan can be started at low speeds, 200 to 500 rpm's. When the fire intensity has stabilized the air curtain incinerator fan speed can be gradually increased up to approximately 1,500 rpm's. The effects of forced draft air curtain incineration becomes noticeable in the box and visible emissions from the trench/pit are within tolerable limits. No visible smoke is observed at this time and only heat is being forced into the air above. At this point carcasses can be added to the incineration area. Gelled diesel fuel will be tested as an alternative fuel. The advantages of the gelled fuel include higher operating temperatures, availability and ease of transportation compared to wood, ease of applying additional fuel with the TerraTorch at critical spots and times, quicker response to lowering burn temperatures, greater disposal capacity over time and units used, and faster set-up time during emergency situations.

Emissions

The Air Burners incinerator operator will ensure proper procedures and steps as delineated by the manufacturer to minimize smoke, ash, and incineration odor escaping from the incineration burn area. Very little if any carcass burning odor was detected during previous tests of the incineration of animal carcasses.

Unauthorized Observers

Only authorized operating personnel will be allowed in close proximity to the equipment during the incineration procedure. Temporary fencing in and around the incineration areas will be installed to keep observers at a safe distance.

Fire Hazards

The potential for accidental fire exist in and around any controlled burning operation. A fully trained forestry safety officer will be involved during any procedure of this test. Planning for proper fire control and the availability of approved fire extinguishers will be considered and made available for use in the event of an emergency. Gustly winds that disrupt the air curtain could cause spot fires and without experienced observers and operators could cause difficulty. Forestry will provide a tractor with fire control equipment. The test demonstration will involve both local fire control officials and forestry staff in the event an emergency occurs.

Mr. Lorenz (the site owner), Tampa Farms, Inc. (Charles Holtxhammer), Air Burners LLC, FDACS Office of Agricultural Water Policy, and the Florida Division of Forestry will provide the following special equipment and other items in support of the test project:

- Animals for the test burn
- Incineration Site
- Wheeled Front-end Loader With Operator
- Motorized Pressure Spray Rig, (For Cleaning, Washing, & Disinfection of Trucks, Trailers, and Digging Equipment)
- Water Transport Equipment
- Diesel Fuel and Fire Wood, (Fuel for Incineration of Carcasses)
- TerraTorch and Trailer
- Security for the area and also supplies and equipment
- Emergency cellular telephone contact point
- Refrigerated storage for stored animals

BIOSECURITY STEPS AND PROCEDURES

It is extremely important that good sound biosecurity procedures be followed during the handling and disposal process. The specific precautions listed below will be used to minimize risk:

The incineration site is isolated and is secured by fencing, locked gates and limited access via farm roads. The site and adjacent farmland will be secured and observed during the process.

All used protective wear will be carefully collected and bagged for incineration.

Only trained and essential personnel will be allowed to participate in the handling, and incineration process.

Forestry will provide security by posting rangers at the available entrances.

COSTS TO BE DETERMINED BY THE TEST PROJECT

- Site Prep., Cover Up, Equip Setup, Equip. Take Down, etc.
- Site Rental. Provided by land owner at no cost
- Air Curtain Incinerator (5 Days) Includes operator provided by Air Burners at no cost
- Diesel Fuel
- Protective Wear
- Fire Wood and Delivery, 40 Tons
- Truck Rental, Semi-tractor and trailer, Back-hoe, Front-end loader, Crane
- Animal Transportation
- Misc. Supplies
- TOTAL

OTHER SPECIAL ITEMS

Porta Potti

Bags, plastic, S, M, L
Boot covers, plastic disposable.
Buckets, utility pail
Coveralls, disposable S, M, L, XL, XXX
Diesel Fuel Transportation
Disinfectant
Gloves, Exam. Vinyl, S, M, L, XL
Gloves, fabric, S, M, L, XL
Gloves, leather, S, M, L, XL
Goggle, plastic safety
Telephones, portable, cell
Axes
Wrecking Bars
Folding Chairs
Chain Saws
Containers, fuel & water
Coolers, water
Cups, paper
Fire Extinguishers
First Aid Kit
Shovels
Table, folding legs

Okeechobee Animal Disposal Demo

Preliminary Burn Agenda

G.Ford -- 03/11/02

- Monday – Transport Air Curtain Burner from Palm City to Ft Drum, unload and position on site.
Fit instrumentation and emission monitoring equipment as required
- Tuesday - Test burn using wood only and FireGel only as a shake down to prove out instrumentation and protocol and provide personnel training / familiarization.
- Wednesday - Burn with wood to get the machine up to temperature (approx 1 hr) then add cow carcasses at approx 1 per hour for 4 hours, add wood as required.
When the last cow carcass has been sufficiently reduced add approx 1 ton of chicken carcasses, add wood as required.
- Thursday - Burn cow and chicken carcasses using FireGel, aim for 1 cow per hour followed by 1 ton of chicken carcasses as above.
- Friday - Burn any remaining wood or waste as required for cleanup
- Sat/Sun - No burning
- Monday - Transport Air Curtain Burner from Ft Drum to Palm City

Estimated Burn Quantities

40 - 50 tons of cord wood plus kindling wood (pallets are ideal)
8 cow carcasses
2 tons chicken carcasses

Operating Manual

**Air Burners
S-Series
S-127 & S-121**

Air Curtain Burners

Self Contained Refractory Walled Incineration Systems

"The environmentally friendly alternative for Wood Waste Reduction"

Visit our Web Site at:
www.airburners.com

US Factory and Main Office
Air Burners, LLC
4390 Cargo Way
Palm City, FL 34990
Phone (561) 220-7303
FAX (561) 220 -7302
E-mail: info@airburners.com

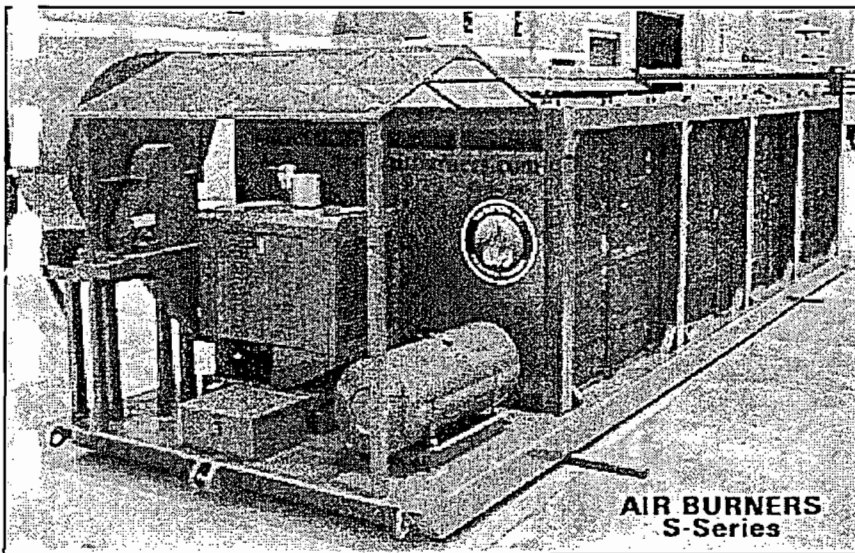
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Subject to change without notice. Metric conversions rounded.

Rev.03-20-01

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Air Burners
S-121 & S-127 Refractory Walled Air Curtain Burners
OPERATING MANUAL

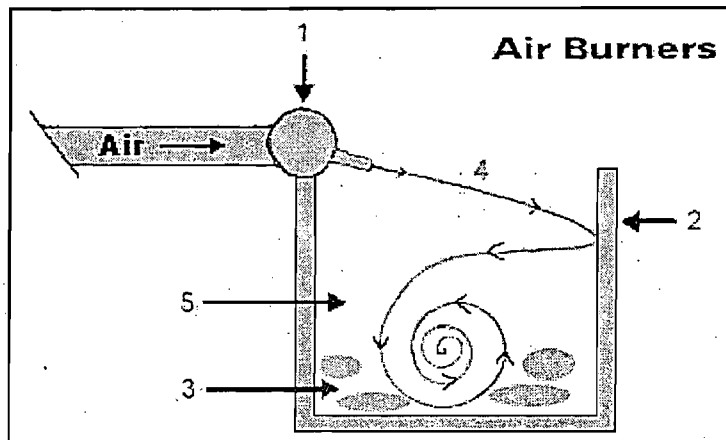


PRINCIPLE OF AIR CURTAIN INCINERATION

OPERATION

The operating principle of the *air curtain* within an incineration device lies in the introduction of controlled high velocity air across the upper portion of the combustion chamber in which combustibles, such as wood, are loaded. The powerful curtain of air created in this process is actually a rotating mass of high temperature air (2,300°F or 1,260°C, or more) that has been trapped in the chamber. The increased combustion time and turbulence results in complete combustion of the loaded waste and the protective curtain created by the rotating air significantly reduces emissions.

The effective and essentially clean incineration of wood waste is documented in engineering studies and analyses that have been compiled over the years at operating facilities throughout the US.



1. Air curtain machine manifold and nozzles directing high velocity air flow into refractory lined box.
2. Refractory lined wall as on the "S" Series machines.
3. Material to be burned.
4. Initial air flow forms a high velocity "curtain" over fire.
5. Continued air flow over-oxygenates fire keeping temperatures high. Higher temperatures provide cleaner burn and more complete burn.

GENERAL DESCRIPTION S-SERIES

The self-contained refractory walled air curtain system is manufactured as an over-the-road transportable combustion system designed to reduce clean wood waste and vegetative growth to ash in a safe, controlled burning process without excessive particulate emissions.

The standard S-Series machines are offered in several sizes. The smallest is the S-116 (16 ft. fire box) and the largest the S-127 (27 ft. fire box). The table below shows the approximate dimensions.

Air Burners, Air Curtain Incineration Systems: S-Series:

Model	Overall Size L x W x H	Fire Box L x W x H	Weight
S-127	37' 4" x 11' 9" x 10' 3"	27' x 8' 4" x 8' 1"	52,000 lbs.
	11.40 m x 3.78 m x 3.13 m	8.20 m x 2.50 m x 2.45 m	23,600 kg
S-121	32' 2" x 11' 9" x 10' 3"	21' x 8' 4" x 8' 1"	41,000 lbs.
	9.80 m x 3.78 m x 3.13 m	6.40 m x 2.50 m x 2.45 m	18,600 kg
S-116	27' x 7' 5" x 7' 5"	16' x 5" x 6"	24,500 lbs.
	8.23m x 2.30m x 2.30m	4.90m x 1.50m x 1.80m	11,150 kg

Power Plant: Diesel Engine (John Deere)
 Fuel Tank: 100 Gallon (378 L) Diesel Fuel Except S-116: 30 Gallons (136 L)
 Engine Electrical: 12 Volts DC
 Drive System: Mechanical PTO 4-Belt Drive Except S-116: PTO Direct Drive

NOTES: 1) All weights and dimensions are approximate.
 2) If required, dimensional drawings can be provided.

GENERAL DESCRIPTION S-SERIES (Con't)

When delivered to a job site, the S-Series machine is ready for use as soon as it is off-loaded. The entire system is built on 10 inch square skids which are designed for easy movement over the ground. The forward equipment deck supports a 4 cylinder Diesel engine, a 100 gallon fuel tank, the mechanical drive system and the fan. When viewed from the front of the unit, the patented 14" diameter air disbursement manifold is mounted on the left top side of the combustion chamber. The back of the pit is fitted with refractory lined panel doors that, when opened, allow the residual ash to remain on the ground as the bottomless unit is dragged forward. The doors need merely be closed and the unit is ready again.

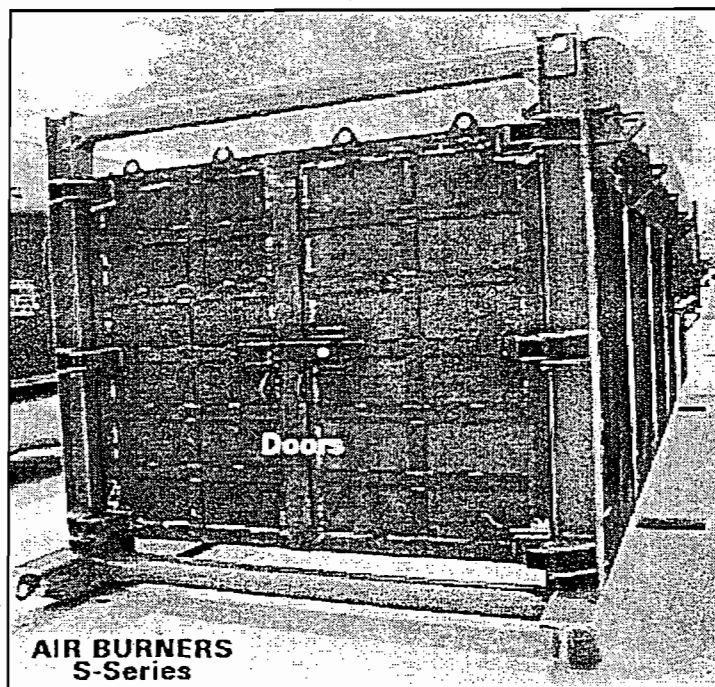
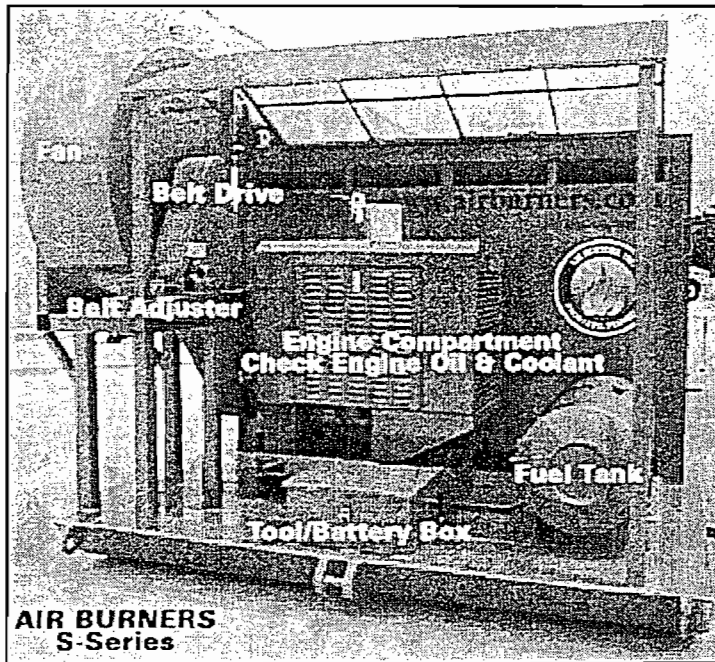
The Diesel engine, operating at 1,800 to 2,000 RPM is coupled through a PTO to a heavy duty 4 belt drive system that turns the fan to about 2,000 RPM. This generates a minimum of 15,000 CFM. The high velocity air is sent down the manifold through the vanes and directed to the outlet nozzles. Air is directed across the top of the box and then reflected down into the combustion zone. The curtain of air acts as a top over the fire box, trapping particulate (small air-born particles) and adding oxygen to the combustion zone thereby generating a hotter more complete fire.

Temperatures achieved by this unit while burning clean wood and vegetative waste range between 2,000°F and 2,800°F.

The air flow coupled with the unique design of the fire box creates a "secondary burn" area just under the air curtain. This secondary burn area increases the "residency" time of the particulate in the highest temperature region of the unit. The higher residency time increases the effective combustion (pyrolysis) resulting in a more complete and cleaner burn.

As a result of the extremely high temperatures and the high velocity air flow directed over and into the fire box at the proper angle, S-Series machines meet or exceed all state and federal emissions limits for air curtain incineration systems.

Air Burners
S-121 & S-127 Refractory Walled Air Curtain Burners
OPERATING MANUAL



SAFETY CONSIDERATIONS

The S-Series machine operator is dealing with fire on a daily basis, it is very important that each and every individual involved with the machine be aware of and practice very rigid safety precautions.

When you are running the S-Series Unit, you are responsible for assuring that it is operated in the safest possible manner at all times. If you notice something wrong, correct it immediately, and if you cannot correct it, find someone who can and/or shut down the machine.

Basic Safety Points:

- 1) **The unit should be placed on cleared, level ground.**

The unit should be placed on level ground to facilitate loading, dumping and moving of the unit. The rear doors weigh over 2000 lbs. each and should not be opened if the unit is inclined on any axis more than 5 degrees.

- 2) **The unit should be placed such that no combustible material is within a minimum 100 foot clearance in any direction.**

The S -Series units do not have a bottom and should not be located over combustibles such as dry grass. In addition hot embers will escape from the unit and depending on the wind will land on the ground around the unit. The unit should not be located within 100 feet of any combustible materials.

- 3) **The unit should not be operated when the wind speeds reach 20 MPH as the potential to carry hot embers is significantly increased.**

As an operator you should always be aware of wind speed and direction. Increased wind speed will affect the integrity of the "air curtain" and will cause hot embers to travel farther. See the wind speed chart regarding suggested set back on page 6.

Air Burners
S-121 & S-127 Refractory Walled Air Curtain Burners
OPERATING MANUAL

4) **NEVER use highly combustible materials to light the unit.**

Highly combustible materials such as gasoline, refined spirits, etc. ignite at an explosive rate which may cause serious injury or death. The safest method to start the fire in the box is to use materials such as paper and kindling wood. In the absence of these materials or when starting materials with a high moisture content diesel fuel oil is an acceptable option.

5) **NEVER climb on the unit to view or light the fire.**

Use a ladder or similar platform located a safe distance from the unit. Do not stand along the rails or on top of the S-Series unit under any circumstance. Falling into the fire box will cause serious injury or death.

6) **Shut the unit down in an emergency.**

Stop loading the unit, stop the air flow by either disengaging the PTO or by shutting down the engine. Dump dirt or sand into the fire box. Water should only be used as a last resort as it will likely damage the refractory panels.

WIND SPEED VS. SAFE DISTANCE			
Wind Speed (MPH)	Approximate Safe Distance for:		
	Structures (Houses, etc.)	Woods/Trees	Brush Piles
10	300'	150'	100'
12	300'	150'	100'
14	300'	200'	150'
16	400'	250'	150'
18	400'	250'	200'
20	500'	250'	200'

Note: The above distances serve as a **GUIDELINE ONLY!** You **MUST ALWAYS** observe the down range area regardless of the wind speed. You must always observe local fire ordinances and directives from the local fire department or other authorities.

HOW TO SET UP THE MACHINE

A) POSITIONING THE UNIT

The S-Series units are totally self-contained and ready to use upon delivery to the job site. The S-Series units are built on a skid base that is designed to facilitate dragging the unit to position it and to move around the site. The use of a front end loader with two cables is all that is needed to facilitate the off-loading from the tilt low-boy transport (or RGN trailer). The weight of an S-127 is 25 tons. Ensure any tow cables are certified for towing this weight. The unit should be positioned with the manifold into the wind.

WARNING; When you tow (drag) the S-Series units, especially in soft soil, watch that the dirt does not build up under the panels and lift the panels off the rails. Never walk inside the box when it is being towed. If the rear of the unit sinks in soft soil while towing use another vehicle to follow and carry some of the load.

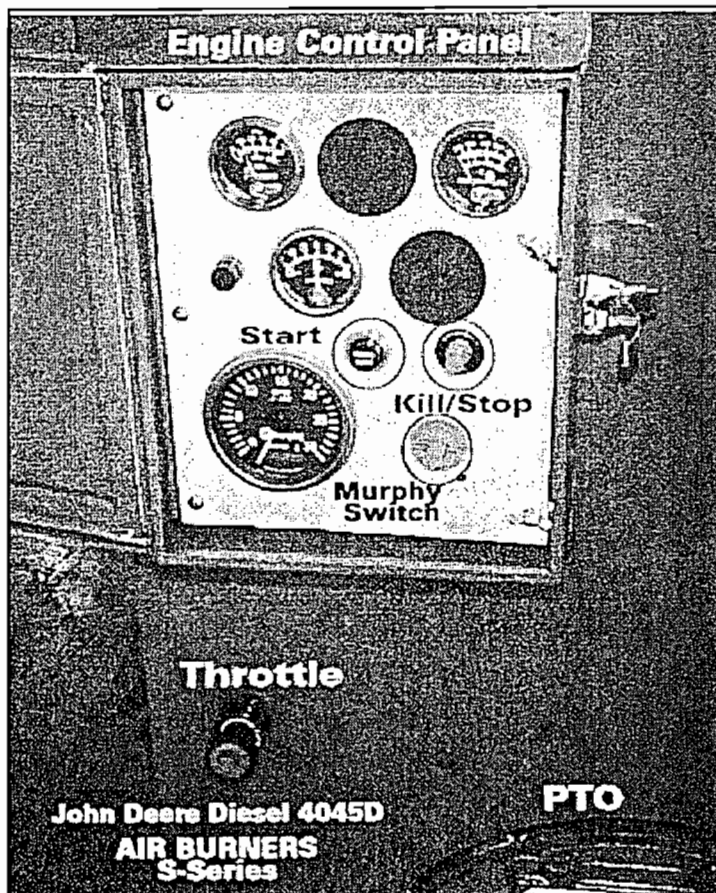
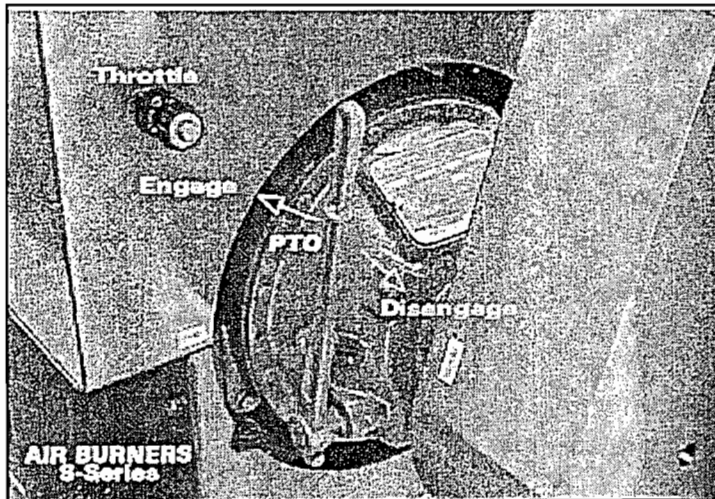
B) PRE-OPERATION CHECKS;

1. Engine oil level
2. Engine coolant level and antifreeze rating
3. Diesel fuel level
4. Drive Belts (4)
5. Fan bearings for set screw tightness and lubrication
6. Air filter for cleanliness
7. Battery cable connection (The unit is shipped from the factory with the negative battery lead disconnected)

HOW TO SET UP THE MACHINE (Con't)

C) STARTING

1. First, ensure that the power take off (PTO) or clutch lever is disengaged, that it is in the position away from the engine pulled all the way towards the side of the unit where the fan is.
2. Depress and hold the Murphy switch and push the engine starter button.
3. Increase RPM's to 1,500 and then engage the clutch by slowly moving the lever forward (towards the engine block) to bring fan up to speed, and then lock the clutch by pushing lever all the way towards engine block. It is very important to start engaging the clutch slowly once 1,500 RPM's have been reached, so as not to stall the engine.
4. Slowly increase the engine RPM's to desired level. Engine RPM's should not exceed 2,000 RPM. Normal operating range is 1,800 to 2,000 RPM.



HOW TO LOAD THE FIRE BOX

THE GOALS IN LIGHTING AN S-SERIES UNIT ARE:

To achieve an even fire across the length of the box.
To start the fire from the bottom of the initial pile.
To build a hot base fire.

1. Unit should be on level ground, the air should be off and the rear doors closed.
2. Load the fire box from the opposite side of the air manifold. This will prevent accidental damage to the manifold.
3. To prevent smoke from escaping under the box, shovel dirt along the bottom edges of the panels. It will only need a couple inches to prevent the smoke from escaping underneath the unit. This is generally only a concern on hard ground and it usually only lasts for the first hour of burning. As burning continues the ash will build up and seal off the bottom of the unit as well.
4. Load *fine material* which is the smaller, dry and clean brush or boards into the bottom of the fire box to a level of about half way up the fire box (4 feet). Ensure the entire bottom area of the fire box is covered.
5. All material placed in the fire box should be tightly packed. Most of it will compress when the second layer of heavy material is added. If there are large air spaces between the deposited waste material, the heat will not build up properly and the fire will be difficult to light.
6. If you are using diesel fuel to assist in the lighting, FIRST INSURE THERE ARE NO HOT COALS REMAINING IN THE UNIT. Spray 10 to 20 gallons across the top of the fine materials.
7. Once you have enough small material in the bottom, begin packing larger material on top, such as logs or stumps. This will become your hot base fire to support continued burning. Use your best and driest materials for startup as this will form a good base for continued burning. If you use stumps on startup it is best to split the first ones so they burn quicker.
8. The level of material in the fire box for light-off should be kept about one foot below the top of the manifold.
9. If you are using diesel fuel as an igniter it is sometimes helpful to add a second coat to the top load again, INSURE THERE ARE NO HOT COALS REMAINING IN THE UNIT before adding the fuel.

HOW TO START THE FIRE

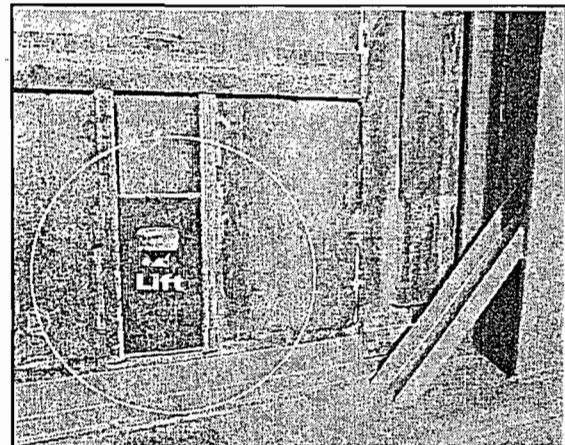
The goal on start up is to build a hot base fire as soon as possible. There is always smoke on start up as all of the material in the box contains moisture, compared to later in the burn operation when only the new material you are loading contains moisture. A high percentage of start up smoke is water vapor.

To minimize start up smoke you can:

- Use your driest materials
- Ensure your materials don't retain dirt or sand
- Use diesel fuel to accelerate the light up

LIGHTING THE FIRE

1. The air should be off. The engine can be running but the PTO should be disengaged.
2. For best results and quickest light up, start the fire from the bottom. Use a torch or oil soaked rags on poles to light the fire. The fire can be started from under the rear doors and from the access hole in the forward panel on the manifold side of the unit.
3. If you light from the top of the unit use a ladder or platform. **Do not stand on the unit as you may fall in causing serious injury or death.** Use a pole to reach down to the bottom of the material pile.



Lift Door to Open Access Hole
(MAKE SURE IT IS NOT HOT)



Access Hole
(DO NOT TOUCH DOOR IF IT IS HOT)

HOW TO START THE FIRE (Con't)

4. If you are using diesel fuel as a starter, let the fire burn until you begin to see wisps of white smoke replacing the wisps of black smoke from the diesel fuel. Then engage the air at approximately 1200 to 1400 RPM. As the fire burns stronger increase the air (approximately 200 RPM every 15 minutes) up to a maximum 2000 RPM.
5. Don't increase the air too quickly as you can "blow" the fire out.
6. If you are lighting the unit without any accelerator (like diesel fuel), follow the precautions in Paragraph 3, using poles under the doors and in the access panel to ignite the fine material. Once you begin to see flames at the top of the box, engage the PTO and bring the air on to approximately 1200 to 1400 RPM.
7. As the fire begins to heat up, increase the RPM's as per paragraph (4).
8. 2,000 RPM's is the maximum you should have to run the engine in order to reach your standard operating temperature.

HOW TO FEED A FIRE

It will generally take 30 to 60 minutes for the fire to build to a point where the temperatures are sufficient for the unit to be operating with minimal smoke.

1. Add material slowly for the first hour. It takes about an hour for the fire to reach maximum temperature. Your goal is to achieve an even fire across the unit.
2. If when you load, especially earlier in the burn operation, you get excessive smoke and ash as you drop the load through the air curtain then you may need to turn the RPM's down from 2000 to 1400 temporarily while you load.
3. Take caution when loading the unit that the material to be burned is not "dumped" into the box too quickly causing hot embers to be thrown from the unit.
4. If you have an area in the box that is smoking, this indicates the temperature is low in that area. Add some dryer smaller material to get the fire burning in this area. Once that area is burning add some of the heavier material.
5. The rate at which you load the unit varies greatly depending on moisture content of the materials and the temperature of the fire. If you overload the box you will notice an increase in white smoke. White smoke is an indication that the temperature is dropping. If the smoke increases stop loading until the fire has built up.
6. The load in the box should not go higher than 1 foot below the manifold. If the materials are piled higher they will begin to break the air curtain and more smoke will escape.

The fire should be loaded continuously throughout the day in order maintain operating temperatures. If the fire is not loaded continuously, the heat will subside which will result in smoke escaping.

HOW TO BURN FIRE DOWN FOR SHUTDOWN

1. All loading should stop between one or two hours before you intend to put the fire out.
2. As the fire burns down, maintain the air speed until the box begins to smoke. As the smoke increases reduce the air speed in increments of about 300 RPM. This will help to reduce the smoke.
3. The air in the manifold needs to flow, both to accelerate the burn-down and to protect the manifold from warping due to excessive heat.

DANGER:

DO NOT shut off the air flow while there is still a fire in the fire box.

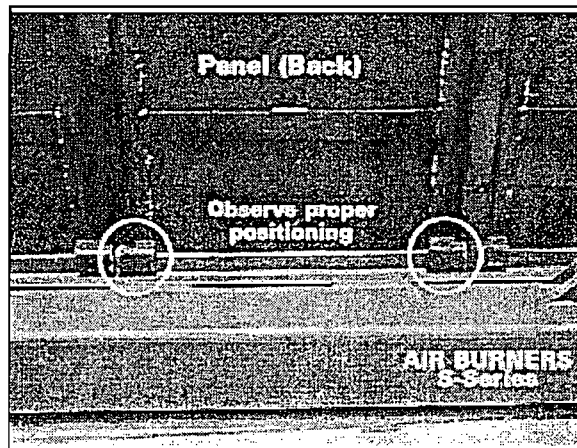
Doing so may cause the elevated temperatures to warp the manifold, nozzle assembly, etc. This will void your warranty.

4. Once the fire has burned down to about one or two feet and there are no flames visible near the manifold it will be safe to shut the engine and air down. Make sure the fire is extinguished before you leave the job site. The best way is to load dirt or sand into the box, **but do not spray the refractory walls with water as this will damage them.**
5. When the burning waste in the fire box is down to a low ash, reduce engine RPM's to idle and disengage the PTO. Push the engine "Kill" button to shut down the engine.

Verify the fire inside is completely out. If it is still burning or smoldering, covering the hot spots with sand will secure the fire box. Ensure the fire is out before you leave the job site.

HOW TO EMPTY THE S-SERIES UNITS

1. The box will operate with up to 3 feet of ash inside, but as the ash gets deeper the efficiency of the unit goes down. Three feet of ash would represent approximately 20 hours of burning. The box should not be run with over 3 feet of ash inside.
2. When the ash level reaches one third the height of the fire box, approximately two to three feet from the ground, it is time to clean out the ashes. One way is to move (drag) the entire unit a short distance. Open the back doors and cover the ash with a thin layer of dirt to minimize fly ash. Connect appropriate cables or chains to the pad eyes or the pull block on the front of the machine and pull the box away from the ash pile that is inside leaving it behind. Wet the ash pile down, remove unburned chunks of wood and then mix the ash into the native soil or otherwise dispose of it.
3. If the box is not going to be moved to dump the ash, you can remove it by driving into the box with a small skip loader type vehicle and scooping the ash out. **Be cautious not to damage the refractory panels.**



Close the doors, and the S-Series machine is ready to be fired up again.

TROUBLESHOOTING

1. Fire will not start.

Material in fire box has too much air space. To correct, load heavy material such as stumps to make the lower material pack down. Use torches and light from the bottom so the fire burns up.

2. Fire burning at one end.

Load brush or stumps directly on top of the burning area. This causes the flames to fan out in an effort to reach the top of the pile. As the fire begins to spread, keep material piled on top of the flames until the entire fire box is on fire.

3. Fire smoking too much.

The most common reason for a smoking fire is too much dirt going into the fire box and reducing the heat. You must make sure the wood waste material is free from large amounts of dirt.

You may have overloaded the box or loaded the box too fast. Example; if you only have 1 ton of material burning you can not load in 3 tons of material. The new material will smother the fire.

The material you are loading may have a very high moisture content. You can either load at a slower rate or mix the wetter material with dryer material.

If you are letting the fire burn down or the load in the box is less than 3 feet deep you may need to turn the air down.

4. Smoke from one area of the box

The area is probably not burning well. Add some fine material to the area to help it build the fire. As the smoke clears add heavier material.

5. Smoke from under the base rails or bottom of panels.

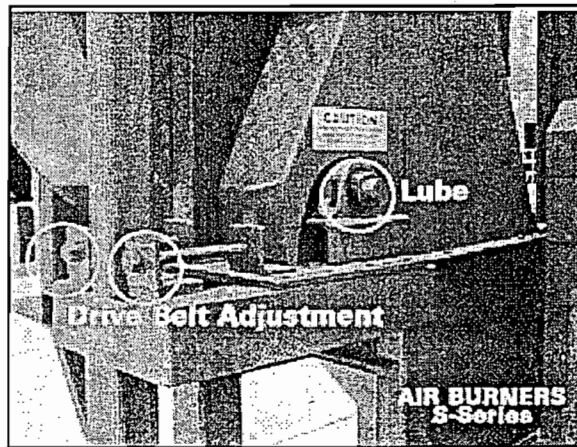
- Loose dirt was not properly shoveled around inside of box to seal between panel bottoms and the ground. To fix, shovel dirt around the outside where the smoke is escaping. Once the ash inside builds up this will stop.

MAINTENANCE AND CARE OF THE UNIT

1. Daily check list:
 - a. Oil level
 - b. Engine coolant level
 - c. Check all belts
 - d. Diesel fuel level
 - e. Grease both fittings on fan bearings
 - f. Tap dirt out of air filter

2. Periodic Maintenance:
 - a. Change oil and filter per John Deere manual
 - b. Clean/replace fuel filter as needed

3. Directions for Adjusting/Changing Drive Belts



- a. Remove protective fan belt guard
- b. Loosen the two locking nuts on the "Drive Belt Adjustment" screws and loosen the four bolts on the adjusting plate
- c. Turn adjusting screws clockwise to tighten belts. With a straight edge between the fan pulley and engine pulley, the belts should not deflect more than 1 inch
- d. Tighten locking nuts and plate bolts

SERVICING SPECIFICATIONS

John Deere 4045D Diesel Engine

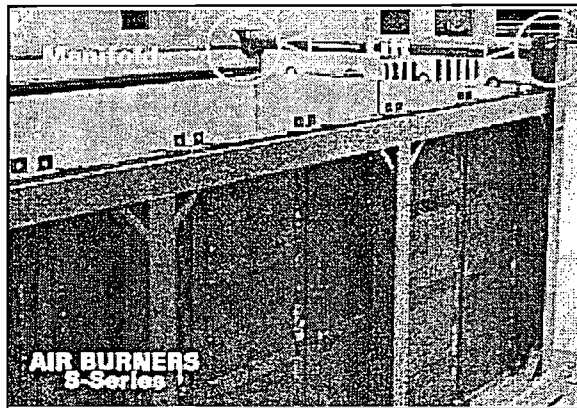
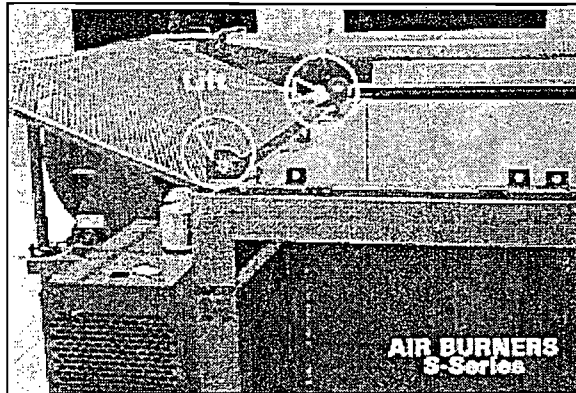
	<u>ID Part No.</u>
Air filter - large element	AT44378
small element	AT44377
Oil filter	T-19044
Fuel filter	AR-50041
Alternator V-belt	T-24473
Engine oil	20W50
Engine coolant	Low silicon anti-freeze

Mechanical Drive & Fan

Belt (4 required)	GATES Super HC Product Code 5v 1400
Fan bearing lubricant	NLGI Grade 2



LIFTING POINTS



Only lift by the designated lifting pads. Never lift by the eye pads on top of the manifold. They are for manifold removal/installation only.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PSD PERMIT MODIFICATION

In the Matter of an
Application for Permit Modification by:

Mr. John Lindsay, Plant General Manager
Florida Power & Light
Post Office Box 176
Indiantown, Florida 34946-0176
_____ /

DEP File No. 0850001-005-AC (PSD-FL-146G)
Inlet Foggers Installation
Combined Cycle Units 003-006
Martin Power Plant

Enclosed is the Final Permit Number 0850001-005 AC (PSD-FL-146G) for a PSD permit modification to install foggers at the compressor inlet of four natural gas and No. 2 fuel oil-fired General Electric PG 7221 FA combustion turbine-electrical generators at the Martin Power Plant in Martin County. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PSD PERMIT MODIFICATION (including the FINAL permit modification) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

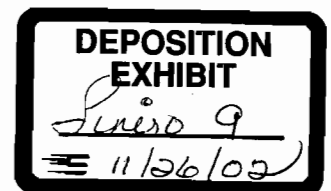
John Lindsay, FP&L*
Richard Piper, FPL
Isidore Goldman, DEP SD
Gregg Worley, EPA
John Bunyak, NPS
Ken Kosky, P.E., Golder Associates

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk)

(Date)



FINAL DETERMINATION

Florida Power and Light Company (FP&L)
Martin Power Plant, Martin County
Inlet Foggers Installation
DEP File No: 0850001-005-AC (PSD-FL-146G)

An Intent to Issue an air construction permit modification, authorizing the installation of inlet foggers on the four General Electric PG7221 FA combustion turbine-electrical generators (E.U.No. 003-006) at the Martin Power Plant was distributed on June 15, 1999. This facility is located 7 miles North of Indiantown, Martin County, Florida.

The Public Notice of Intent to Issue Air Construction Permit was published in The Okeechobee News on June 19, 1999. Comments were received from FP&L.

FP&L comments were related to the new Specific Condition for the foggers. FP&L requested to revise this condition to include an allowance for increasing fogger operating hours if distillate oil is not fired. The Department evaluated FP&L comments and agreed with their request. The new Specific Condition for the foggers is revised as follows:

Inlet Fogger Installation:

Inlet foggers may be installed on Units CT3A, CT3B, CT4A and CT4B. Operation of the foggers on each unit may not exceed the following limits:

181,661 degree F-hours in aggregate firing natural gas fuel if no distillate fuel is fired

If distillate oil is fired in any of the CT's during a calendar year, the allowable degree F-hours for natural gas shall be decreased by 2.77 degree F-hours for every hour operated on distillate oil fuel.

No CT may exceed 4,000 degree F-hours per year firing distillate oil fuel

The temperature drop across the inlet foggers shall be monitored whenever water is injected at the foggers and hourly average temperature drops shall be calculated and recorded automatically using computer system. The product of each hour of fogger operation and the average temperature depression for that hour shall be summed for each calendar year and shall be submitted to the DEP SE District Office with the Annual Operating Report. The temperature monitoring system shall be calibrated annually in accordance with Guidance Document No. DARM-EM-03 (attached).

The final action of the Department will be to issue the permit modification as noted above.

Memorandum

Florida Department of Environmental Protection

TO: Howard L. Rhodes

THRU: Clair H. Fancy
Al Linero

FROM: Teresa Heron

DATE: July 15, 1999

SUBJECT: FP&L Martin Plant
DEP File No. 0850001-005-AC (PSD-FL-146G)

Attached is the final PSD permit modification package for the compressor inlet fogger project at the FP&L Martin Plant. The application is to install inlet foggers ahead of the compressor inlets of four combined cycle combustion turbines. The foggers will operate on hot days and days of relatively low humidity. The evaporative cooling effected by the foggers will allow the units to operate closer to their rated capacity.

Both short-term and annual emissions will increase because the heat rate through the units will increase when the foggers. Maximum short-term emissions will still occur during cold days when use of the foggers is not feasible. The units already comply with 40 CFR 60, Subpart GG, so NSPS applicability is not an issue. FP&L proposes to limit operation of the coolers to 34,320 degrees F-hour on gas and 4000 degrees F-hour on oil to insure PSD is not triggered by their use.

I recommend your signature and approval of the cover letter and the final permit modification letter.

AAL/th

Attachments

July 15, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Lindsay
Plant General Manager
Florida Power & Light
Post Office Box 176
Indiantown, Florida 34946-0176

Re: DEP File No. PSD-FL-146(G) and 0850001-005AC
Inlet Foggers Project
Martin Power Plant

Dear Mr. Lindsay:

The Department reviewed your request to modify the PSD Permit to authorize the installation of inlet foggers on the four General Electric PG7221 combustion turbine-electrical generators (Combustion Turbines 3A&B, 4A&B). The request is acceptable as detailed in the Department's Technical Evaluation and Preliminary Determination.

PSD-FL-146 permit is hereby modified as follows:

Inlet Fogger Installation

Inlet foggers may be installed on Units CT3A, CT3B, CT4A and CT4B. Operation of the foggers on each unit may not exceed the following limits:

181,661 degree F-hours in aggregate firing natural gas fuel if no distillate fuel is fired

If distillate oil is fired in any of the CT's during a calendar year, the allowable degree F-hours for natural gas shall be decreased by 2.77 degree F-hours for every hour operated on distillate oil fuel.

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Mr. John Lindsay
July 15, 1999

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes. Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by the filing of a Notice of Appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within (thirty) days after this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Sincerely,

Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/aal

Enclosures

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this PSD PERMIT MODIFICATION was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

John Lindsay, FP&L*
Richard G. Piper, FP&L
Ken Kosky P.E., Golder Associates
Isidore Goldman, SED
John Bunyak, NPS
Gregg Worley, EPA

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52,
Florida Statutes, with the designated
Department Clerk, receipt of which is hereby
acknowledged.

(Clerk)

(Date)