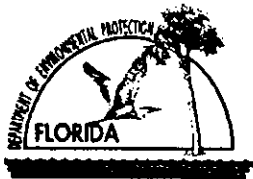


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Department of Environmental Protection

RECEIVED

Division of Air Resources Management

DEC 06 1999

BUREAU OF AIR REGULATION

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

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

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Kissimmee Utility Authority	
2. Site Name: Roy B. Hansel Plant	
3. Facility Identification Number: [] Unknown 0970001	
4. Facility Location: Street Address or Other Locator: 102 Lakeshore Boulevard City: Kissimmee County: Osceola Zip Code: 34741	
5. Relocatable Facility? [] Yes [X] No	6. Existing Permitted Facility? [X] Yes [] No

Application Contact

1. Name and Title of Application Contact: A. K. Sharma, Director of Power Supply	
2. Application Contact Mailing Address: Organization/Firm: Kissimmee Utility Authority Street Address: P. O. Box 423219 City: Kissimmee State: Florida Zip Code: 34742-3219	
3. Application Contact Telephone Numbers: Telephone: (407) 933 - 7777 Fax: (407) 847 - 0787	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	<i>December 6, 1999</i>
2. Permit Number:	<i>0970001-003-AC</i>
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

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: 0970001-001-AV

- 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.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: A. K. Sharma, Director of Power Supply
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Kissimmee Utility Authority Street Address: P. O. Box 423219 City: Kissimmee State: Florida Zip Code: 34742-3219
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (407) 933 - 7777 Fax: (407) 847 - 0787
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [], 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 <u>A. K. Sharma</u> Date <u>12/31/99</u>

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: Jerome J. Guidry, P.E., Q.E.P. Registration Number: 32589
2. Professional Engineer Mailing Address: Organization/Firm: Perigee Technical Services, Inc. Street Address: 3214 Deer Chase Run City: Longwood State: Florida Zip Code: 32779-3173
3. Professional Engineer Telephone Numbers: Telephone: (407) 333 - 7374 Fax: (407) 333 - 9396

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 [], 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 [], 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 [], 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

12-3-99

* Attach any exception to certification statement.

Construction/Modification Information

1. Description of Proposed Project or Alterations:

Installation of an inlet fogging system. See Attachment A for detailed information.

2. Projected or Actual Date of Commencement of Construction:

3. Projected Date of Completion of Construction: **March 2000**

Application Comment

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION (All Emissions Units)

Emissions Unit Description and Status

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>49.9 MW Combined Cycle Combustion Turbine</p>			
<p>4. Emissions Unit Identification Number:</p> <p>ID: 001</p>		<p><input type="checkbox"/> No ID</p> <p><input type="checkbox"/> ID Unknown</p>	
<p>5. Emissions Unit Status Code:</p> <p>A</p>	<p>6. Initial Startup Date:</p> <p>N/A</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p>49</p>	<p>8. Acid Rain Unit?</p> <p><input type="checkbox"/></p>
<p>9. Emissions Unit Comment: (Limit to 500 Characters)</p> 			

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:		mmBtu/hr
2. Maximum Incineration Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:		
5. Requested Maximum Operating Schedule:		
	hours/day	days/week
	weeks/year	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):		
<p>Continuous operation of the fogger is requested when natural gas is burned. It is requested that the fogger be allowed to operate up to 5800 hours per year when fuel oil is burned.</p>		

Attachment A

This modification request is to install an inlet water spray fogger to the combined cycle combustion turbine at the Kissimmee Utility Authority Hansel facility in Kissimmee. The installation of this unit will reduce the compressor inlet air temperature, allowing more fuel to be burned in the turbine. The reduction in inlet air temperature is accomplished by spraying a water mist into the inlet air stream. The evaporation of the fine water droplets results in adiabatic cooling of the air stream.

The installation of the fogger in and of itself does not result in an increase in air pollution emissions; the increase in emissions is due to the increase in the amount of fuel combusted. This modification request does not involve an increase in permitted annual emissions since the unit is already restricted by limitations on annual heat input. Also, this request does not involve an increase in maximum permitted hourly emissions since the emission characteristics of the turbine with the fogger in operation will be similar to the emissions which would normally occur at the inlet temperatures which occur naturally without the fogger in operation. The fogger installation will involve an increase in actual emissions since the unit will operate more hours at a lower inlet air temperature, thereby increasing the amount of fuel burned during hot days.

The amount of this increase in fuel combustion can be determined using the attached performance graph provided by Westinghouse for the Econo-Pac system. This graph relates compressor inlet temperature to power output and fuel consumption. Using the attached graph, a compressor inlet air temperature of 95 degrees would translate to a power output of about 87 percent; at this power output, fuel consumption is about 89 percent. Assuming a maximum cooling effect of 17 degrees Fahrenheit as provided by the manufacturer, the fogger would reduce the compressor inlet temperature to 78 degrees. At this temperature, the percent power output would be 93 percent, which translates into a fuel consumption rate of 95 percent, or an increase in fuel consumption of 6 percent.

The combustion turbine is permitted at a maximum fuel input rate of 441.7 MMBtu/hr when burning fuel oil, which would produce the worst case emissions. At 95 degrees Fahrenheit, the actual fuel consumption would be less than this amount without the fogger installed. The fogger is estimated to increase actual fuel consumption by 6 percent of this maximum value, or about 27 MMBtu/hr.

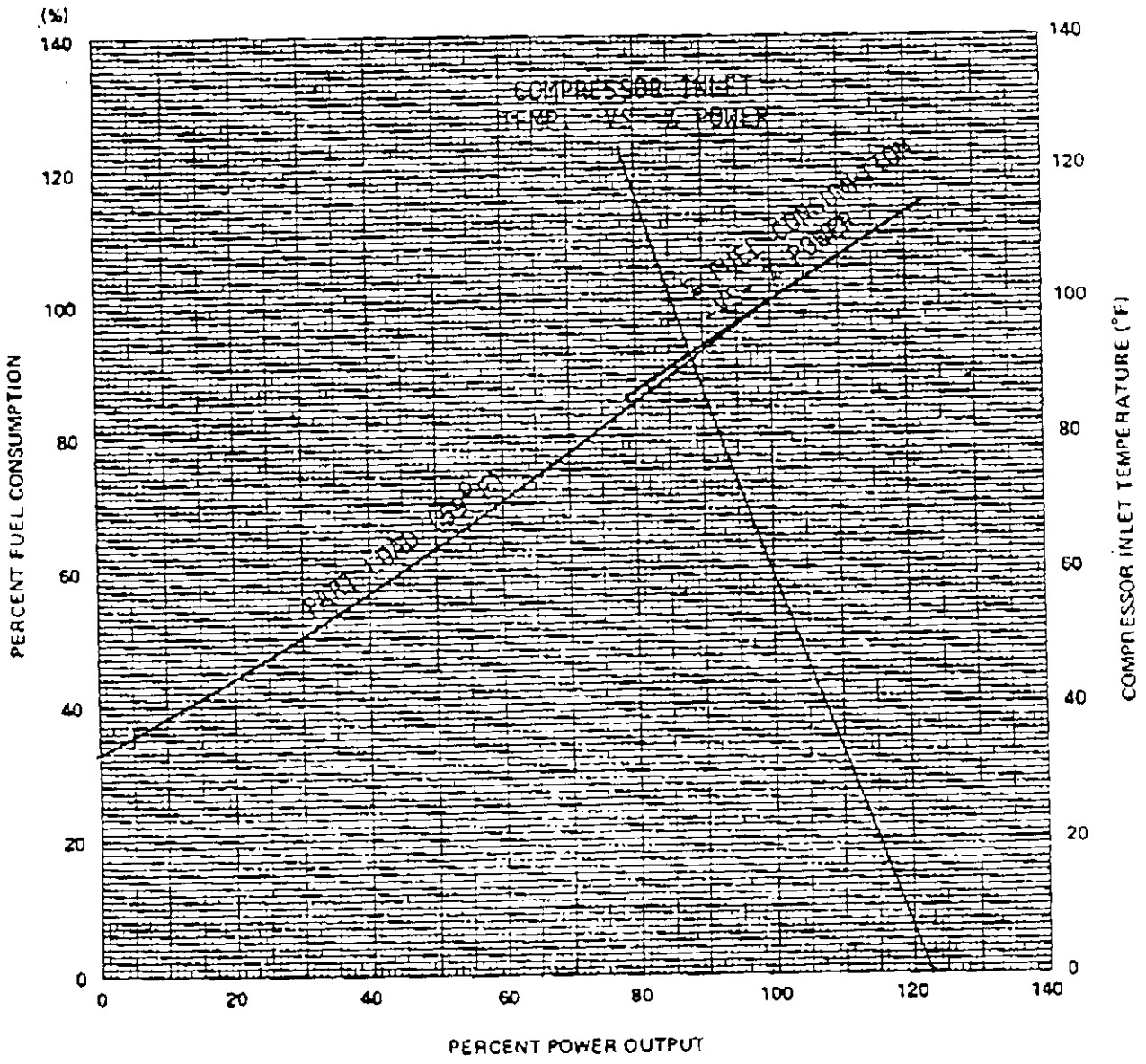
Although it is not likely, and probably not possible, to operate the fogger continuously, estimates of the increase in emissions with the fogger operating continuously can be made using emission factors from AP-42, Tables 3.1-1 and 3.1-3 as listed in the following table:

Estimated Emissions from Fuel Oil Combustion

Pollutant	Emission Factor (lb/MMBtu)	Estimated Emissions From 27 MMBtu/hr		PSD Significant Emission Rates (tons/year)
		(lb/hr)	(tons/year)	
NOx	0.29	7.8	34.3	40
SO ₂	1.01 x 0.5 % S	13.6	59.7	40
PM ₁₀	0.0372	1.0	4.4	15
CO	0.0192	0.5	2.3	100
VOC	0.0048	0.1	0.6	40

Assuming that fuel oil is burned continuously and that the fogger operates continuously, only the estimated emissions of SO₂ exceed the PSD significant emissions threshold. Since this unit typically uses natural gas as its fuel, it is unlikely that fuel oil would be burned continuously. Using the emission factors above, the maximum number of hours that the unit could be fired with fuel oil without exceeding the PSD significant emissions threshold is just over 5800 hours, presuming that the unit would be fired with natural gas at 0.0006 lb SO₂/MMBtu for the remaining hours. It is doubtful that the fogger could be used more than 5800 hours per year. However, Kissimmee Utility Authority requests that the fogger be allowed to operate continuously when burning natural gas and up to 5500 hours per year when burning fuel oil. Under these conditions, PSD will not apply to this proposed modification.

ECONO-PAC SYSTEM PERFORMANCE



NOTE: APPLICABLE FOR FULL LOAD PERFORMANCE AT GIVEN TEMPERATURE OR PART LOAD AT 59°F

HEAT RATE = (100% H.R.) (% F.C./% K.W.)

MAXIMUM POWER 46 MW INTO GENERATOR