1-800-842-3624
FAX # 904 354-2811 or
904 356-2364

Steuart Agip
STEUART PETROLEUM COMPANY

Telex # 810 827 0273
Easylink # 62788501

April 29, 1992

Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blairstone Road
Tallahassee, Florida 23999

Attn: Ms. Teresa M. Heron

Dear Ms. Heron:

Confirming our conversation and your request, Steuart Petroleum Company has No. 2 fuel oil and No. 6 residual fuel oil available in Jacksonville, Florida as follows:

	No. 2 Fuel Oil	No. 6 Fuel Oil
Sulfur % wt.	.1 - .5 max	2.45 - 3.0 max
Posted selling price 4/29/92	.5735 $/G	13.25 - 13.30 $/B

It is important to note that No. 6 fuel oil sold in Florida is 2.5% max and oil with a higher sulfur is sold into the state of Georgia or to ocean going marine vessels. Also, for specific requirements, No. 6 fuel oil with a sulfur lower than 2.45% can be acquired and made available.

I hope this provides the information you need. Please call me if you have any questions or would like to discuss this information with me.

Sincerely yours,

E. Keith Hill

E. Keith Hill
Southern Marketing Manager

EKH/tdh
c.c.:
Bob Bosman, Marketing Representative

Florida
Power
CORPORATION

March 25, 1992

Mr. C. H. Fancy, Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Bldg.
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

RECEIVED
MAR 26 1992
Division of Air
Resources Management

Attention: Mr. Thomas Rogers

Dear Mr. Fancy:

Re: Osceola County- A.P.
Florida Power Corporation (FPC)
Intercession City
AC 49-203114; PSD-FL-180

This letter serves to transmit Florida Power Corporation's (FPC) air quality related values (AQRV) analysis, conducted at the request of the Florida Department of Environmental Regulation (DER). As you may recall, FPC had originally submitted an air permit application for the above-referenced facility on October 1, 1991. To date, over five months have elapsed and our Intercession City application still has not even been deemed "complete", the first step in DER's permit application review process. FPC had taken the initiative on this project by involving the National Park Service (NPS) in initial discussions and has made every effort to respond to DER and NPS concerns in a timely manner.

At the request of the Florida DER, FPC has asked KBN Engineering and Applied Sciences, Inc. (KBN) to conduct an air quality related values (AQRV) analysis more comprehensive in scope than the analysis that was submitted on January 22, 1992. As you recall, FPC had previously submitted an AQRV analysis for the worst case pollutant (SO_2), in accordance with previous DER guidance.

At the request of DER and the National Park Service (NPS), FPC has attempted to conduct an AQRV analysis for not only SO_2 and other criteria pollutants, but for numerous non-criteria pollutants that could potentially be emitted from the proposed Intercession City combustion turbine units. This analysis was undertaken by FPC to address Class I area concerns, in spite of the fact that no guidance currently exists concerning how to conduct an AQRV analysis of this scope. FPC requests that our submittal be viewed in this context and that DER deem the above-referenced application complete.

If you should have any questions or require clarification concerning this submittal, please contact me at (813) 866-4387.

Sincerely,

W. Jeffrey Pardue, Manager
Environmental Programs - Regulatory

Enclosure

cc: Ken Kosky, KBN
J. Tolbert
C. Holladay
A. Zahm, C'Dist
Q. Harper, EPA
C. Shaver, NPS
CHF/BA/PL

AIR QUALITY RELATED VALUE ANALYSIS FOR THE PROPOSED MODIFICATION TO FLORIDA POWER CORPORATION'S INTERCESSION CITY FACILITY

At the request of Florida Power Corporation (FPC), an air quality-related value (AQRV) analysis was conducted to assess the potential risk to AQRVs of the Chassahowitzka National Wilderness Refuge (NWR) due to the proposed modification at the Intercession City facility. Potential air quality impacts of the proposed modifications were predicted at the Prevention of Significant Deterioration (PSD) Class I area of the Chassahowitzka NWR. The U.S. Department of the Interior in 1978 administratively defined AQRVs to be:

> All those values possessed by an area except those that are not affected by changes in air quality and include all those assets of an area whose vitality, significance, or integrity is dependent in some way upon the air environment. These values include visibility and those scenic, cultural, biological, and recreational resources of an area that are affected by air quality.
>
> Important attributes of an area are those values or assets that make an area significant as a national monument, preserve, or primitive area. They are the assets that are to be preserved if the area is to achieve the purposes for which it was set aside (Federal Register 1978).

Except for visibility, AQRVs have not been specifically defined. However, odor, soil, flora, fauna, cultural resources, geological features, water, and climate generally have been identified by land managers as AQRVs. Since specific AQRVs have not been defined for Chassahowitzka National Wilderness Area, this AQRV analysis involved evaluating air quality effects to general vegetation and wildlife. A screening approach was used which compared the maximum predicted exposure of air pollutants of concern to lowest observed effect levels for vegetation and wildlife. In conducting the assessment, both airborne exposure and indirect exposure to vegetation were evaluated. For wildlife, the effects of airborne exposure were evaluated. Maximum concentrations and depositions were predicted using the Industrial Source Complex Short Term (ISCST) model and 5 years of surface and upper air meteorological data collected by the National Weather Service in Tampa and Ruskin, respectively.

AIRBORNE EXPOSURE: VEGETATION

The gaseous concentrations ($\mu g/m^3$) of nitrogen dioxide, particulate matter, carbon monoxide, fluorine, sulfuric acid mist, polycyclic organic matter, formaldehyde, and chlorine were used in the determination of impacts on vegetation. These compounds are believed to interact predominantly with foliage and this is considered the major route of entry into plants. In this assessment, 100 percent of the compound of interest was assumed to interact with the vegetation. The maximum concentrations

predicted for the proposed sources for the 1-hour, 3-hour, 8-hour, 24-hour, and annual averaging periods are presented in Table 1.

Nitrogen dioxide

Nitrogen dioxide (NO_2) is the second largest emission from the proposed plant addition. This compound can injure plant tissue with symptoms usually appearing as irregular white to brown collapsed lesions between the leaf veins and near the margins. Conversely, non-injurious levels of NO_2 can be absorbed by plants, enzymatically transformed into ammonia, and incorporated into plant constituents such as amino acids (12).

Plant damage can occur through either acute (short-term, high concentration) or chronic (long-term, relatively low concentration) exposure. For plants that have been determined to be more sensitive to NO_2 exposure than others, acute (1, 4, 8 hours) exposure caused 5 percent predicted foliar injury at concentrations ranging from 3,800 to 15,000 $\mu g/m^3$ (7). Chronic exposure of selected plants (some considered NO_2-sensitive) to NO_2 concentrations of 2,000 to 4,000 $\mu g/m^3$ for 213 to 1,900 hours caused reductions in yield of up to 37 percent and some chlorosis (17).

By comparison of published toxicity values for NO_2 exposure to short term (i.e., 1-, 3-, and 8-hour averaging times) and long-term (annual averaging time) modeled concentrations, the possibility of plant damage in the preserve can be examined for both acute and chronic exposure situations, respectively. The 1-, 3-, and 8-hour estimated NO_2 concentrations at the point of maximum impact are 12.3, 6.3, and 3.4 $\mu g/m^3$, respectively. These concentrations are approximately $2x10^{-4}$ to $3x10^{-3}$ of the levels that could potentially injure 5 percent of the plant foliage. For a chronic exposure, the annual estimated NO_2 concentration at the point of maximum impact in the preserve (0.09 $\mu g/m^3$) is $2x10^{-5}$ to $4x10^{-5}$ of the levels that caused minimal yield loss and chlorosis in plant tissue.

Table 1. Predicted Air Quality Impacts for the Proposed Gas Turbines at FPC's Intercession City Facility Used to Address AQRVs at Chassahowitzka Class I Area

Constituent	Units	Proposed Maximum Emissions			Averaging Period	Predicted Impacts (ug/m3)		
		4 EA GTs	2 FA GTs	Total		4 EA GTs	2 FA GTs	Total
Generic (SO2)	TPY	2.51E+03	2.23E+03	4.74E+03	Annual	0.10	0.063	0.16
	lb/hr	2.47E+03	2.19E+03	4.66E+03	24-hour	2.64	1.20	3.8
	lb/hr	2.47E+03	2.19E+03	4.66E+03	8-Hour	6.74	3.59	10.3
	lb/hr	2.47E+03	2.19E+03	4.66E+03	3-Hour	11.0	8.11	19.1
	lb/hr	2.47E+03	2.19E+03	4.66E+03	1-Hour	22.3	15.0	37.3
Particulate Matter	TPY	1.02E+02	5.76E+01	1.59E+02	Annual	4.01E-03	1.63E-03	5.64E-03
	lb/hr	6.00E+01	3.40E+01	9.40E+01	24-hour	6.42E-02	1.86E-02	8.28E-02
	lb/hr	6.00E+01	3.40E+01	9.40E+01	8-Hour	1.64E-01	5.57E-02	2.20E-01
	lb/hr	6.00E+01	3.40E+01	9.40E+01	3-Hour	2.68E-01	1.26E-01	3.94E-01
	lb/hr	6.00E+01	3.40E+01	9.40E+01	1-Hour	5.41E-01	2.33E-01	7.74E-01
Nitrogen Dioxide	TPY	1.38E+03	1.22E+03	2.60E+03	Annual	5.43E-02	3.45E-02	8.87E-02
	lb/hr	8.12E+02	7.19E+02	1.53E+03	24-hour	8.68E-01	3.94E-01	1.26E+00
	lb/hr	8.12E+02	7.19E+02	1.53E+03	8-Hour	2.22E+00	1.18E+00	3.40E+00
	lb/hr	8.12E+02	7.19E+02	1.53E+03	3-Hour	3.63E+00	2.66E+00	6.29E+00
	lb/hr	8.12E+02	7.19E+02	1.53E+03	1-Hour	7.32E+00	4.94E+00	1.23E+01
Carbon Monoxide	TPY	3.99E+02	2.87E+02	6.86E+02	Annual	1.58E-02	8.11E-03	2.39E-02
	lb/hr	2.36E+02	1.69E+02	4.05E+02	24-hour	2.52E-01	9.27E-02	3.45E-01
	lb/hr	2.36E+02	1.69E+02	4.05E+02	8-Hour	6.44E-01	2.77E-01	9.21E-01
	lb/hr	2.36E+02	1.69E+02	4.05E+02	3-Hour	1.05E+00	6.26E-01	1.68E+00
	lb/hr	2.36E+02	1.69E+02	4.05E+02	1-Hour	2.12E+00	1.16E+00	3.29E+00
Fluoride	TPY	2.52E-01	2.24E-01	4.76E-01	Annual	9.95E-06	6.33E-06	1.63E-05
	lb/hr	1.49E-01	1.32E-01	2.81E-01	24-hour	1.59E-04	7.23E-05	2.31E-04
	lb/hr	1.49E-01	1.32E-01	2.81E-01	8-Hour	4.06E-04	2.16E-04	6.23E-04
	lb/hr	1.49E-01	1.32E-01	2.81E-01	3-Hour	6.65E-04	4.89E-04	1.15E-03
	lb/hr	1.49E-01	1.32E-01	2.81E-01	1-Hour	1.34E-03	9.06E-04	2.25E-03
Sulfuric Acid Mist	TPY	5.21E+02	1.70E+02	6.91E+02	Annual	2.05E-02	4.82E-03	2.54E-02
	lb/hr	3.07E+02	1.01E+02	4.08E+02	24-hour	3.29E-01	5.51E-02	3.84E-01
	lb/hr	3.07E+02	1.01E+02	4.08E+02	8-Hour	8.39E-01	1.65E-01	1.00E+00
	lb/hr	3.07E+02	1.01E+02	4.08E+02	3-Hour	1.37E+00	3.72E-01	1.75E+00
	lb/hr	3.07E+02	1.01E+02	4.08E+02	1-Hour	2.77E+00	6.90E-01	3.46E+00
Polyclic Organic Matter	TPY	2.16E-03	1.92E-03	4.08E-03	Annual	8.53E-08	5.43E-08	1.40E-07
	lb/hr	1.28E-03	1.13E-03	2.41E-03	24-hour	1.37E-06	6.21E-07	1.99E-06
	lb/hr	1.28E-03	1.13E-03	2.41E-03	8-Hour	3.49E-06	1.86E-06	5.34E-06
	lb/hr	1.28E-03	1.13E-03	2.41E-03	3-Hour	5.70E-06	4.20E-06	9.90E-06
	lb/hr	1.28E-03	1.13E-03	2.41E-03	1-Hour	1.15E-05	7.78E-06	1.93E-05
Formaldehyde	TPY	3.14E+00	2.79E+00	5.93E+00	Annual	1.24E-04	7.89E-05	2.03E-04
	lb/hr	1.85E+00	1.65E+00	3.50E+00	24-hour	1.98E-03	9.01E-04	2.88E-03
	lb/hr	1.85E+00	1.65E+00	3.50E+00	8-Hour	5.06E-03	2.70E-03	7.76E-03
	lb/hr	1.85E+00	1.65E+00	3.50E+00	3-Hour	8.28E-03	6.09E-03	1.44E-02
	lb/hr	1.85E+00	1.65E+00	3.50E+00	1-Hour	1.67E-02	1.13E-02	2.80E-02
Chlorine	TPY	2.09E-01	1.86E-01	3.95E-01	Annual	8.24E-06	5.25E-06	1.35E-05
	lb/hr	1.23E-01	1.10E-01	2.33E-01	24-hour	1.32E-04	6.00E-05	1.92E-04
	lb/hr	1.23E-01	1.10E-01	2.33E-01	8-Hour	3.37E-04	1.80E-04	5.16E-04
	lb/hr	1.23E-01	1.10E-01	2.33E-01	3-Hour	5.51E-04	4.06E-04	9.56E-04
	lb/hr	1.23E-01	1.10E-01	2.33E-01	1-Hour	1.11E-03	7.52E-04	1.86E-03

Note: Annual emissions, TPY, and impacts are based on 3,390 hours of operation for each turbine.

Although it has been shown that simultaneous exposure to SO_2 and NO_2 results in synergistic plant injury (3), the magnitude of this response is generally only 3 to 4 times greater than either gas alone and usually occurs at unnaturally high levels of each gas. Therefore, the concentrations are still $8x10^{-5}$ to 0.01 of the levels that potentially cause plant injury for either an acute or chronic exposure.

Particulate matter

Although information pertaining to the effects of particulate matter on plants is scarce, baseline concentrations are available (11). Ten species of native Indian plants were exposed to levels of particulate matter that ranged from 210 to 366 $\mu g/m^3$ for an 8-hour averaging period. Damage in the form of a higher leaf area/dry weight ratio was observed at varying degrees for most plants tested. Concentrations of particulate matter lower than 163 $\mu g/m^3$ did not appear to be injurious to the tested plants.

By comparison of published toxicity values for particulate matter exposure (i.e., 8-hour averaging time) concentrations, the possibility of plant damage in the preserve can be determined. The maximum predicted 8-hour particulate matter concentration is 0.22 $\mu g/m^3$. This concentration is approximately $6x10^{-4}$ to $1x10^{-3}$ of the values that affected plant foliage.

Carbon monoxide

As with particulate matter, information pertaining to the effects of carbon monoxide on plants is scarce. The main effect of carbon monoxide presence is a reduction in carbon fixation by plants. Carbon monoxide at a concentration of 5.7 $\mu g/m^3$ decreased the amount of carbon fixation in oleander and bean plants (5).

By comparison of published effect values for carbon monoxide exposure, the possibility of plant damage in the preserve can be determined. The maximum predicted 1-hour carbon monoxide concentration of 3.29 $\mu g/m^3$ is 0.58 of the value that depressed photosynthesis in laboratory studies. However, it is important to note that the effect of carbon monoxide is reversible. The amount of damage sustained at this level (if any) for one hour would have negligible effects over an entire growing season. The annual concentration of 0.0239 $\mu g/m^3$ reflects a more realistic, yet conservative, carbon monoxide level. This concentration is $4x10^{-3}$ of the value which depressed photosynthesis.

Fluoride

Fluoride is a reactive halide that often becomes volatile in the form of hydrofluoric acid (HF). Hydrofluoric acid is more phytotoxic than NO_2 or SO_2; however, this compound will be emitted at a

much lower rate than either of these other two gases. Symptoms of damage generally consist of leaf-margin necrosis and interveinal chlorosis which occurs from the reaction of the halogen with cellular constituents (16). Generally, fluoride can cause injury in many susceptible species of plants (e.g. gladiolus) at concentrations of 1.0 $\mu g/m^3$ (2). MacLean et al. (10) fumigated six types of citrus with HF at two concentrations for 2 different time periods. When Hamlin orange was subjected to 750 $\mu g/m^3$ HF for 2 hours, 20 percent of the orange trees demonstrated slight tip and marginal necrosis. When the same type trees were treated with 20,000 $\mu g/m^3$ HF for 4 hours, complete defoliation occurred. By using the maximum predicted 1-hour fluoride concentration of 0.0023 $\mu g/m^3$ and assuming that all fluoride is transformed into HF, it is apparent that the predicted concentrations will be $1x10^{-7}$ to $2x10^{-3}$ of the values causing phytotoxicity.

A chronic study assessing the impacts of HF was conducted by fumigating valencia oranges for 5 months at concentrations between 5 and 12.5 $\mu g/m^3$. The tree leaves demonstrated slight to severe chlorosis as the amount of HF increased (4). The predicted annual concentration of 0.000016 $\mu g/m^3$ (transformed to HF) is $1x10^{-6}$ to $3x10^{-6}$ of the values causing phytotoxic effects.

Chlorine

Chlorine is another reactive halide that often becomes volatile in the form of hydrochloric acid (HCl) and injury symptoms are similar to those of HF damage. Tomato plants treated for 2 to 3 hours at a HCl concentration of 780 $\mu g/m^3$ demonstrated no visible injury symptoms. However, when the concentrations were raised to 1,500 and 3,400 $\mu g/m^3$, slight and severe injury was exhibited, respectively (16). Alfalfa and radishes that were treated with 250 $\mu g/m^3$ HCl for 2 hours demonstrated signs of injury (16). Using the maximum 1-hour concentration of 0.0019 $\mu g/m^3$ (transformed to HCl), the predicted concentration is $6x10^{-7}$ to $1x10^{-6}$ of the values producing phytotoxic symptoms.

Polycyclic organic matter (POM) and formaldehyde

With the exception of ethylene, little information exists that examines the effects of gaseous organic compounds on plant growth. Ethylene is produced naturally by plants and is responsible for many of the responses a plant produces as it ages and enters the reproductive stage of development. Ethylene is also produced by the combustion of organic material such as agricultural and industrial waste. Losses due to ethylene have been documented in a cotton field when levels of ethylene rose to above 7,500 $\mu g/m^3$. Lemons are affected by ethylene concentrations as low as 62 to 125 $\mu g/m^3$, at which point epinastic symptoms are observed (15).

By using the maximum predicted concentration of 62 $\mu g/m^3$ as a basis for risk assessment for the group of organic gases, an estimate of the impact of this group of compounds can be constructed. The maximum 1-hour concentrations of polycyclic organic matter and formaldehyde of 0.00002 and 0.03 $\mu g/m^3$, respectively, are in the range of $3x10^{-7}$ to $5x10^{-4}$ of the values causing injury.

Sulfuric acid mist

The maximum 1-hour sulfuric acid mist concentration is predicted to be 3.46 $\mu g/m^3$, which is approximately 1.4 parts per billion (ppb). Although literature pertaining to the effects of sulfuric acid on terrestrial vegetation could not be obtained, effects on aquatic macrophytes were acquired.

In a study in which the aquatic plants, hydrilla, naiad, and vallisneria were exposed to concentrations of 27 or 80 ppm of sulfuric acid, mild burning was observed around the base of the plants which came into contact with undiluted acid. In jars in which these same concentrations of acid were added homogeneously (i.e., mixed before plant exposure), no plant damage was observed (13). Because aquatic plants have a poorly developed (if existing) cuticle, they serve to indicate phytotoxicity to a greater extent than terrestrial plants. The potential phytotoxic assessment in this case is therefore more conservative than using terrestrial plant information. The maximum 1-hour concentration of 1.4 ppb in the Class I area is $2x10^{-5}$ to $5x10^{-5}$ of the values that caused either mild burning or no effects at all on aquatic vegetation.

SOIL DEPOSITED EXPOSURE: VEGETATION

The annual deposition concentrations (g/m^2) of lead, arsenic, beryllium, mercury, manganese, nickel, cadmium, chromium, copper, vanadium, selenium, antimony, barium, cobalt, and zinc were assumed to partition into the soil (bulk density of 1.25 g/cc) to a depth of 10 cm. From this soil concentration, it was assumed that equal partitioning would ensue into dry plant matter. These values are considered to be quite conservative due to the assumption that all of the elements would be 100 percent available for plant uptake and would be internalized in plant tissue at a concentration equal to that of the soil.

Maximum depositions were predicted using the ISCST model using particle size distribution for boilers firing distillate oil as presented in EPA's document, Compilation of Air Pollutant Emission Factors, AP-42, September 1991. This distribution assumes that more than 50 percent of the particles have a diameter of 10 μm or more. For the proposed sources (combustion turbines), it is likely that less than 10 percent of the particles will have diameters of 10 μm or more. Therefore, the deposition calculations provide conservative estimates of material deposited to the Class I area. The maximum depositions to the Class I area due to the proposed sources are presented in Table 2.

Antimony

Studies in which 27 trees were analyzed for antimony indicated an internal antimony concentration between 7 and 50 $\mu g/g$ in stem ash without evidence of phytotoxicity (6). The annual amount of 1.5×10^{-6} $\mu g/g$ predicted to be absorbed by vegetation is 3.0×10^{-8} to 2.2×10^{-7} of the values that caused no phytotoxicity.

Arsenic

Naturally occurring levels of arsenic in plants range from 0.01 to 5.0 $\mu g/g$ (14). A concentration of 5 to 20 $\mu g/g$ in plants is considered excessive (6). The annual amount of 2.9×10^{-7} $\mu g/g$ predicted to be absorbed by vegetation is 1.5×10^{-8} to 5.8×10^{-8} of the values that are considered excessive.

Table 2. Predicted Deposition Values for the Proposed Gas Turbines at FPC's Intercession City Facility Used to Address AQRVs at Chassahowitzka Class I Area

Constituent	Units	Proposed Maximum Emissions			Averaging Period	Units	Maximum Predicted Deposition		
		4 EA GTs	2 FA GTs	Total			4 EA GTs	2 FA GTs	Total
Generic (SO2)	TPY	2.51E+03	2.23E+03	4.74E+03	Annual	g/m2	1.60E-03	1.20E-03	2.80E-03
						ug/g	1.28E-02	9.60E-03	2.24E-02
Antimony	TPY	1.70E-01	1.51E-01	3.20E-01	Annual	g/m2	1.08E-07	8.11E-08	1.89E-07
						ug/g	8.63E-07	6.49E-07	1.51E-06
Arsenic	TPY	3.26E-02	2.90E-02	6.16E-02	Annual	g/m2	2.08E-08	1.56E-08	3.64E-08
						ug/g	1.66E-07	1.25E-07	2.91E-07
Barium	TPY	1.51E-01	1.35E-01	2.86E-01	Annual	g/m2	9.63E-08	7.25E-08	1.69E-07
						ug/g	7.70E-07	5.80E-07	1.35E-06
Beryllium	TPY	1.94E-02	1.72E-02	3.66E-02	Annual	g/m2	1.23E-08	9.28E-09	2.16E-08
						ug/g	9.88E-08	7.42E-08	1.73E-07
Cadmium	TPY	8.14E-02	7.22E-02	1.54E-01	Annual	g/m2	5.18E-08	3.89E-08	9.07E-08
						ug/g	4.14E-07	3.11E-07	7.26E-07
Chromium	TPY	3.69E-01	3.27E-01	6.96E-01	Annual	g/m2	2.35E-07	1.76E-07	4.11E-07
						ug/g	1.88E-06	1.41E-06	3.29E-06
Cobalt	TPY	7.05E-02	6.24E-02	1.33E-01	Annual	g/m2	4.49E-08	3.36E-08	7.85E-08
						ug/g	3.59E-07	2.69E-07	6.28E-07
Copper	TPY	2.17E+00	1.93E+00	4.10E+00	Annual	g/m2	1.38E-06	1.04E-06	2.42E-06
						ug/g	1.11E-05	8.31E-06	1.94E-05
Lead	TPY	6.92E-02	6.14E-02	1.31E-01	Annual	g/m2	4.40E-08	3.30E-08	7.71E-08
						ug/g	3.52E-07	2.64E-07	6.17E-07
Manganese	TPY	5.00E-02	4.44E-02	9.44E-02	Annual	g/m2	3.18E-08	2.39E-08	5.57E-08
						ug/g	2.55E-07	1.91E-07	4.46E-07
Mercury	TPY	2.33E-02	2.07E-02	4.39E-02	Annual	g/m2	1.48E-08	1.11E-08	2.59E-08
						ug/g	1.18E-07	8.91E-08	2.08E-07
Nickel	TPY	1.32E+00	1.17E+00	2.49E+00	Annual	g/m2	8.42E-07	6.30E-07	1.47E-06
						ug/g	6.73E-06	5.04E-06	1.18E-05
Selenium	TPY	1.82E-01	1.62E-01	3.44E-01	Annual	g/m2	1.16E-07	8.71E-08	2.03E-07
						ug/g	9.29E-07	6.97E-07	1.63E-06
Vanadium	TPY	5.41E-01	4.81E-01	1.02E+00	Annual	g/m2	3.45E-07	2.59E-07	6.04E-07
						ug/g	2.76E-06	2.07E-06	4.83E-06
Zinc	TPY	5.30E+00	4.71E+00	1.00E+01	Annual	g/m2	3.38E-06	2.54E-06	5.91E-06
						ug/g	2.70E-05	2.03E-05	4.73E-05

Note: Annual emissions, TPY, and impacts are based on 3,390 hours of operation for each turbine.
Deposition values, ug/g, assume constituents deposited in 125 kg of soil.

Barium

Naturally occurring levels of barium in plants range from 7.5 to 165 $\mu g/g$ (9). The annual amount of $1.4x10^{-6}$ $\mu g/g$ predicted to be absorbed by vegetation is $8.2x10^{-9}$ to $1.8x10^{-7}$ of the values at which no phytotoxic observations were noted.

Beryllium

Toxicity of plants has been reported at concentrations of 2 $\mu g/g$ in liquid culture (6). The annual amount of $1.7x10^{-7}$ $\mu g/g$ predicted to be absorbed by vegetation is $8.6x10^{-8}$ of the value at which retardation of growth occurred.

Cadmium

Cadmium is a relatively rare element that resides in nature at levels of 0.15 to 0.2 $\mu g/g$. Generally, 3 to 5 $\mu g/g$ retards the growth of plants (6). The annual amount of $7.3x10^{-7}$ $\mu g/g$ predicted to be absorbed by vegetation is $1.5x10^{-7}$ to $2.4x10^{-7}$ of the values at which retardation of growth occurred.

Chromium

A soil concentration of 1,370 to 2,740 $\mu g/g$ chromium was reported to cause chlorosis in citrus (6), but liquid cultures that contained 150 $\mu g/g$ were toxic to citrus seedlings. The annual amount of $3.3x10^{-6}$ $\mu g/g$ predicted to be absorbed by vegetation is $2.2x10^{-8}$ of the value at which toxic symptoms were observed.

Cobalt

Plant concentrations as high as 2,000 to 10,000 $\mu g/g$ cobalt have been detected in leaves of persimmon and ash, respectively (6). Cobalt was reported to cause chlorosis and stunting in a variety of plants at levels from 6 to 142 $\mu g/g$ in soils (1). The annual amount of $6.3x10^{-7}$ $\mu g/g$ predicted to be absorbed by vegetation is $4.4x10^{-9}$ to $1.1x10^{-7}$ of the values at which toxic symptoms were observed.

Copper

Copper is an essential element for plant growth. Very few instances of toxicity have been reported, and copper deficiency is more often a problem than toxicity. Citrus seedlings that were exposed to approximately 150 $\mu g/g$ of copper demonstrated appreciable chlorosis (6). The annual amount of $1.9x10^{-5}$ $\mu g/g$ predicted to be absorbed by vegetation is $1.3x10^{-7}$ of the value at which toxic symptoms were observed.

Lead

Naturally occurring levels of lead in plants range from 0.1 to 10 μg/g with an average of 2.0 μg/g (8). A lead soil concentration of 30 to 100 μg/g generally retards the growth of plants (6). The annual amount of 6.2×10^{-7} μg/g predicted to be absorbed by vegetation is 6.2×10^{-9} to 2.1×10^{-8} of the values at which growth retardation was observed.

Manganese

Manganese is another element that is essential for plant growth. However, toxicity does occur at elevated levels and a generally toxic concentration of manganese is reported to be greater than 400 to 500 μg/g (6). The annual amount of 4.5×10^{-7} μg/g predicted to be absorbed by vegetation is 1.1×10^{-9} of the level at which toxicity was observed.

Mercury

Although mercury compounds are toxic to bacteria and fungi, higher plants are relatively resistant to mercury poisoning. Tea plants growing above mercury-rich deposits contained as much as 3.5 μg/g without showing signs of toxicity. Apparently healthy spanish moss plants collected had a mercury content of 0.5 μg/g (6). From the few studies available on the effects of mercury on plants, it seems as if mercury is not concentrated to a great extent (6). The annual amount of 2.1×10^{-7} μg/g predicted to be absorbed by vegetation is 5.9×10^{-8} to 4.1×10^{-7} of the values at which no signs of toxicity were observed.

Nickel

The general range of excessive or toxic amounts of nickel in most plant species varies from 10 to 100 ppm (8). The annual amount of 1.2×10^{-5} μg/g predicted to be absorbed by vegetation is 1.2×10^{-8} to 1.2×10^{-7} times the values at which growth retardation was observed.

Selenium

No recorded instances of naturally occurring selenium damage have been documented to date (6). Plants absorb and accumulate selenium, but the general responses of these plants vary over such a wide range of concentrations, that a level considered toxic to plants is hard determine (6). Concentrations of selenium in plants are known to range from 3 to 4,190 μg/g. The annual amount of $1.6x10^{-6}$ μg/g predicted to be absorbed by vegetation is $3.9x10^{-9}$ to $5.4x10^{-7}$ of the concentration at which no effects have been observed.

Vanadium

Plants absorb and accumulate vanadium differentially, with concentrations in various plants ranging from 20 to 700 μg/g (6). However, phytotoxic responses were observed in some plants grown in soils at a concentration of 140 μg/g (1). The annual amount of $4.8x10^{-6}$ μg/g predicted to be absorbed by vegetation is $3.5x10^{-8}$ of the value at which phytotoxicity occurred.

Zinc

Zinc is another element that is essential for plant growth. However, toxicity does occur at elevated levels and a generally toxic concentration of zinc is reported to be greater than 300 μg/g (5). The annual amount of $4.7x10^{-5}$ μg/g predicted to be absorbed by vegetation is $1.6x10^{-7}$ of the value at which toxicity was observed.

In summary, the phytotoxic effects from proposed plant emissions are expected to be minimal. Safety factors as great as 10 million have been demonstrated in this assessment. It is important to note that the elements were modeled with the assumption that 100 percent was available for plant uptake which is rarely the case in a natural ecosystem.

AIRBORNE EXPOSURE: WILDLIFE

A wide range of physiological and ecological effects to fauna has been reported for gaseous and particulate pollutants (18,19). The most severe of these effects have been observed at concentrations above the secondary ambient air quality standards. Physiological and behavioral effects have been observed in experimental animals at or below these standards. No observable effects to fauna are expected at concentrations below the values reported in Table 3.

Table 3. Examples of Reported Effects of Air Pollutants at Concentrations Below National Secondary Ambient Air Quality Standards

Pollutant	Reported Effect	Concentration ($\mu g/m^3$)	Exposure
Sulfur Dioxide	Respiratory stress in guinea pigs	427 to 854	1 hour
	Respiratory stress in rats	267	7 hours/day; 5 day/week for 10 weeks
	Decreased abundance in deer mice	13-157	continually for 5 months
Nitrogen Dioxide[a,b]	Respiratory stress on mice	1,917	3 hours
	Respiratory stress in guinea pigs	96 to 958	8 hours per day for 122 days
Particulates[c]	Respiratory stress, reduced respiratory disease defenses	120 PbO_3	continually for 2 months
	Decreased respiratory disease defenses in rats, same with hamsters	100 $NiCl_2$	2 hours

[a] Gardner and Graham, 1976. In Proc. 16th Annual Harford Biol. Symp. p. 1-21.
[b] Trzeciak et al., 1977. Environ. Res. 14:87-91.
[c] Newman and Schreiber, 1988. Env. Tox. Chem. 7:381-390.

The major air quality risk to wildlife in the United States is from continuous exposure to pollutants above the National Ambient Air Quality Standards. This occurs in non-attainment areas, e.g., Los Angeles Basin. Risks to wildlife also may occur for wildlife living in the vicinity of an emission source which experiences frequent upset or episodic conditions that occur because of malfunctioning of equipment, unique meteorological conditions, or during startup (19). Under these conditions, chronic effects (e.g., particulate contamination) or acute effects (e.g., injury to health) have been observed (18).

For impacts on wildlife, the lowest threshold values of NO_x and particulates reported to cause physiological changes are shown in Table 3. These values are several orders of magnitude larger than predicted concentrations. No significant effects on terrestrial wildlife AQRVs from NO_x and particulates are expected. These results are considered indicative of the risk of other air pollutants predicted to be emitted from the facility.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

March 9, 1992

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. W. Neiser, Senior Vice President
Legal and Governmental Affairs
Florida Power Corporation
3201 34th Street South
St. Petersburg, Florida 33733

Dear Mr. Neiser:

RE: PSD-FL-180, AC 49-203114

The Department acknowledges receipt of your letters dated January 23 and February 10, 1992. As explained in our February 21, 1992 letter, your application for the Intercession City facility remains incomplete.

Should you have any questions on this matter, please contact Teresa Heron (review engineer) or Cleve Holladay (meteorologist) at the above address or at (904) 488-1344.

Sincerely,

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

CHF/TH/plm
cc: C. Collins, C Dist.
K. Kosky, KBN
G. Harper, EPA
C. Shaver, NPS

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PS Form 3800, June 1990

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Mr. R. W. Neiser, Sr. Vice Pres.
Legal and Governmental Affairs
Florida Power Corp.
3201 34th Street South
St. Petersburg, FL 33733

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PS Form 3811, November 1990 ☆U.S. GPO: 1991—287-068 **DOMESTIC RETURN RECEIPT**

March 6, 1991

Ms. Teresa Heron
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Osceola County - A.P.
Intercession City Combustion Turbines
AC 49-203114, PSD-FL-180

Dear Ms. Heron:

This correspondence clarifies the statement on page 2-1 of the report that requests an average operation of 3,390 hours per year for the six CT's (i.e., an average capacity factor of 38.7 percent) but would allow any one CT to operate up to 8,760 hours per year. Such a condition was included in permit for Florida Power Corporation's DeBary CT project (AC64-191015, PSD-FL-167). Specific Condition No. 4 restricted the maximum hourly heat input and the fuel use for each CT, and restricted the 6 CTs to a maximum annual fuel usage equivalent to 3,390 hours per year. This condition allows any one CT to operate more than 3,390 hours per year as long as the cumulative operation of the 6 CTs would not exceed the maximum annual fuel usage. This provides operational flexibility to operate the 6 CTs as required up to a plant capacity factor of 38.7 percent and would limit total SO_2 emissions.

For the Intercession City Project, a similar condition is requested. The condition requested for the 4 GE Frame EA machines are:

4. The permitted materials and utilization rates for the simple cycle gas turbines shall not exceed: (a) a maximum heat input of 1,144.3 MM Btu/hr/unit at 20°F. (b) a maximum No. 2 fuel oil consumption of 8,698 gallons/hr/unit or 106,120,560 gallons/year for 4 CTs. (c) SO_2 emissions for the 4 CTs shall not exceed 2,257 tons per year. (d) the maximum capacity factor for the 4 CTs shall not exceed 38.7 percent.

The condition requested for the 2 GE Frame FA machines are:

4. The permitted materials and utilization rates for the simple cycle gas turbines shall not exceed: (a) a maximum heat input of 2,032 MM Btu/hr/unit at 20°F. (b) a maximum No. 2 fuel oil consumption of 15,452 gallons/hr/unit or 97,238,760 gallons/year for 2 CTs. (c) SO_2 emissions for the 2 CTs shall not exceed 2,068 tons per year. (d) the maximum capacity factor for the 2 CTs shall not exceed 38.7 percent.

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

KBN

91015/kfk/mlb

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street
Gainesville, Florida 32605

MAR 13 92

Patty
Bill
I have a copy

Ms. Teresa Heron
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Please note that the maximum fuel use is based on 20°F operating condition while the annual average fuel use is based on 59°F operating condition. The latter is an appropriate annual operating condition and was the basis for the same condition in the DeBary permit.

Please call if you have any questions.

Sincerely,

Kennard F Kosky

Kennard F. Kosky, P.E.
President and Principal Engineer

cc: S. Osborne

KFK/mlb

cc: J. Koerner
C. Holladay
A. Zahm, C. Dist.
J. Harper, EPA
C. Shaver, NPS

91015A1/12

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

February 21, 1991 — shared Dec 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. R. W. Neiser, Senior Vice-President
Legal and Governmental Affairs
Florida Power Corporation
3201 34th Street South
St. Petersburg, FL 33733

Dear Mr. Neiser:

RE: PSD-FL-180, AC 49-203114

The Department has reviewed your January 23, 1992 response to our October 31, 1991 letter requesting additional information. The Department also received additional PSD increment modeling on February 10, 1992. This letter is responding only to the information submitted on January 23.

Based on our review of that information, the Department has determined that the air quality related values (AQRV) analysis is incomplete. The AQRV analysis was only performed for sulfur dioxide, but should have at least included the impacts of all PSD significant pollutants that are to be emitted by the project. Additionally, the National Park Service (NPS) has informed the Department verbally that the AQRV analysis should include not only PSD significant impacts but also the impacts of all pollutants, including toxics, that are to be emitted by the project. We are enclosing the most recent NPS response to the Department concerning a proposed project located near a Class I area for your information. If you have any questions, please contact Cleve Holladay at the above address or at (904)488-1344.

Sincerely,

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

CHF/CH/pa
Enclosure
cc: K. Kosky, P.E.
C. Collins, C. District
J. Harper, EPA
C. Shaver, NPS

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Mr. R. W. Neiser
Sr. Vice-President
Florida Power Corp.
3201 34th Street South
St. Petersburg, FL 33733

4a. Article Number

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6. Signature (Agent)

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PS Form 3811, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

United States Department of the Interior
NATIONAL PARK SERVICE
SOUTHEAST REGIONAL OFFICE
75 Spring Street, S.W.
Atlanta, Georgia 30303

TAKE PRIDE IN AMERICA

IN REPLY REFER TO

N3615 (SER-ODN)

Mr. C.H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

We have reviewed the Indiantown Cogeneration, L.P. (Indiantown) Electric Power Plant Site Technical Evaluation and Preliminary Determination Document regarding a proposed cogeneration facility near Indiantown, Florida. The Indiantown facility will be a major source of nitrogen oxides (NO_x), carbon monoxide, particulate matter, and sulfur dioxide (SO_2), and will be located approximately 145 km north of Everglades NP, a Class I air quality area administered by the National Park Service. We have the following comments regarding the Technical Evaluation and Preliminary Determination Document.

We agree that the use of a baghouse to control particulate matter emissions, and a high efficiency (95 percent) spray dryer absorber to remove SO_2 represents the best available control technology for the proposed boiler. For NO_x control, Indiantown proposes to use advanced combustion controls, low-NO_x burners, and selective non-catalytic reduction (SNCR), resulting in a NO_x limit of 0.17 pounds per million Btu (lb/MMBtu).

We understand that Indiantown's proposed NO_x controls are the same as those proposed by Keystone Cogeneration Systems (Keystone) in Gloucester County, New Jersey. The Keystone permit allows an initial maximum NO_x rate of 0.17 lb/MMBtu, but also includes a condition that requires Keystone to design and optimize the SNCR system to achieve a NO_x emission rate of less than 0.10 lb/MMBtu. Another condition in the Keystone permit states that at the end of the first 2-year operating period, the 0.17 lb/MMBtu limit shall be revised downward to reflect the rate that is demonstrated to be consistently achieved by the SNCR system. We recommend that if Indiantown does install the SNCR system, they be required to meet similar conditions as those in the Keystone permit.

As you know, EPA-Region 4 recently revised the PSD permit for Orlando Utilities Stanton Unit 2. The permit now requires Orlando Utilities to install a Selective Catalytic Reduction (SCR) system on Unit 2 to reduce NO_x emissions. The SCR system is to be designed to achieve a NO_x emission rate of less than 0.10 lb/MMBtu. Similarly, in December 1990, the New Jersey Department of Environmental Protection granted a permit to Chambers Cogeneration that requires a SCR system designed to meet a 0.10 lb/MMBtu limit. Finally, the Virginia Department of Air Pollution Control recently issued draft permits for two coal-fired cogeneration facilities that require SCR to control NO_x emissions (Hadson Power and Cogentrix-Dinwiddie). Given the recent developments in the SCR technology and the fact that other permitting authorities are now requiring SCR for coal-fired boilers, we ask that you require Indiantown to reconsider SCR for their proposed boiler as well.

Indiantown used the EPA ISCST model for the cumulative Class I increment analysis and included a total of 23 increment-consuming sources. The results of this analysis show that once in 1983 and once again in 1984, the 3-hour and 24-hour Class I SO_2 increments were exceeded (highest concentrations of 30.5 micrograms per cubic meter (ug/m^3) and 6.0 ug/m^3, respectively). However, the high second-high concentrations during these episodes were below the allowable increment. Therefore, the class I increments for both the 3-hour and 24-hour averaging periods are exceeded, but not yet violated. The high second-high concentration for 1983 data was 4.8 ug/m^3, which is 96 percent of the class I increment of 5 ug/m^3. As you may know, if a proposed source will cause or contribute to a Class I increment violation, the applicant will need to ask us to certify that there will be no adverse impacts to Class I area resources before the project can be permitted.

Indiantown only reported the high and high-second-high concentrations per year for our review. In the future, if the applicant is modeling with the ISCST model, we ask that they provide us with the "Max 50" table so that we can know more about the location and magnitude of impacts at other receptors in the park. In addition, Indiantown's total ambient analysis was overly conservative because they modeled all PSD and existing sources, and then added those concentrations to monitored ambient background levels. A more realistic total ambient impacts analysis for Class I areas is performed by modeling the proposed source and any newly permitted, but not yet operating, source and adding these impacts to the ambient background concentrations.

Indiantown performed a visibility analysis using the EPA model VISCREEN. The proposed project passed the Level I VISCREEN test, indicating that the proposed emissions would have low potential for visibility impairment due to plume impacts in Everglades NP.

In our review of the Florida Power and Light Technical Evaluation and Preliminary Determination Document (May 1991) we identified our concerns with the effects emissions from the proposed facility may have on the air quality related values (AQRVs) at Everglades NP. We also have the same general concerns with the Indiantown project. The Indiantown Technical Evaluation and Preliminary Determination Document states that the predicted emissions from the proposed project, including a background concentration, will be below the State's Ambient Air Quality Standards including the secondary National Ambient Air Quality Standards (NAAQS), which were designed to protect vegetation from the adverse impacts of air pollutants. The document states that this project is not expected to have a harmful impact on soils and vegetation. We wish to again clarify that there are documented effects below the NAAQS, and that compliance with the NAAQS does not ensure that there will be no negative impacts. The secondary NAAQS are based primarily on effects on cash crops and may not reflect a level of protection for all AQRVs such as native vegetation found in Class I areas. In addition, the secondary NAAQS are national levels set to protect against effects due to multiple and diverse sources and may not provide adequate protection for sensitive species found in only one area of the country, nor do they address synergistic effects of multiple pollutants. Therefore, there may be instances, and ongoing studies are confirming this, where adverse effects to AQRVs can occur at levels below the NAAQS.

The location of Everglades NP at the southern tip of the Florida peninsula allows for a unique ecosystem whose native communities reflect both temperate and subtropical influences. Studies have shown that fertilization can decrease the frost hardiness of certain plant species. We are concerned that the nitrates resulting from emissions would favor more frost tolerant species, thereby causing major shifts in community composition and structure. For example, South Florida slash pine (Pinus elliotti var. densa) is a major constituent of the upland park community, and is the predominant canopy tree species. The slash pines in the park grow on a limestone-derived soil, and they are most likely nitrogen limited. Fertilization by anthropogenic nitrogen could cause the pines to continue growing into the winter, increasing the likelihood of frost damage. Over time, the slash pines could be replaced by a tree species that is less responsive to fertilization.

We are also concerned about the roles that nitrogen oxides and volatile organic compounds play as ozone precursors. Fumigation studies conducted in chambers have shown that slash pine seedlings are particularly sensitive to chronic ozone concentrations below the NAAQS. The seedlings showed reductions in root growth even before visible foliar injury was observed. We have not yet duplicated the experiment in the field to

determine if current ozone levels in Everglades NP induce the same degree of growth reductions as were observed in the chambers.

Lichens and bryophytes are common in the park, and due to their unique morphology, are particularly sensitive to air pollutants such as sulfur dioxide. The nitrates in acid rain may also be harmful to bryophytes, particularly to tank bryophytes which accumulate rainwater in a cup-shaped basin formed by overlapping leaves. Two species of epiphytes found in the park, Tillandsia flexuosa, a bromeliad, and Epidendrum nocturnum, an orchid, are considered threatened under the Preservation of Native Flora of Florida Act. The sensitivity of these two threatened species to air pollutants is not known at this time.

Nitrogen oxide and sulfur dioxide emissions may lead to the acidification of the huge wetland system that comprises much of the park. Acidification leads to changes in the flora and fauna of an aquatic ecosystem.

Finally, we are concerned about the high levels of mercury that have been found in the federally endangered Florida panther and other animals in the park. It is not known at this time what the source of the mercury is, but we encourage you to limit mercury emissions in the vicinity of the park until the source can be identified and remedial action taken.

If you have any questions regarding this matter, please contact Dee Morse of our Air Quality Division in Denver at 303-969-2071.

Sincerely,

C. W. Ogle

FOR James W. Coleman, Jr.
Regional Director
Southeast Region

B. Andrews
M. Flanett
J. [illegible]
J. Wilderness, SE Dist.
B. [illegible], PC&E/Bechtel
R. [illegible]

Florida
Power
CORPORATION

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JAN 23 1992
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January 22, 1992

Mr. C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Re: Osceola County - A.P.
Florida Power Corporation
Intercession City
AC49-203114; PSD-FL-180

This correspondence completes the information requested in your letter of October 31, 1991, concerning this project. Information about the best available control technology (BACT) analysis, general description of the proposed turbines, and impact analysis of air toxic compounds were presented in my letter of December 16, 1991. This submittal addresses the impact of this project on the Chassahowitzka National Wilderness Area (NWA) concerning the prevention of significant deterioration (PSD) Class I increment consumption of sulfur dioxide (SO_2) concentrations and air quality related values (AQRV).

At the request of Florida Power Corporation (FPC), KBN Engineering and Applied Sciences, Inc. (KBN) has performed an air quality modeling analysis to determine the maximum PSD increment consumption of SO_2 concentrations at the PSD Class I area of the Chassahowitzka NWA. This analysis included modeling with the Industrial Source Complex Short-Term (ISCST) model using the SO_2 emissions from FPC's proposed project at Intercession City with a revised inventory of other increment consuming major and minor sources. Based on the use of the revised inventory, the maximum concentrations are predicted to comply with the PSD Class I increments with the ISCST model. Therefore, the

potential use of the MESOPUFF II model, which has been proposed for this project, is not warranted at this time.

KBN has also performed an AQRV analysis related to the potential impacts of the proposed project on vegetation, soils, wildlife, and visibility in the Class I area. The predicted increase in SO_2 concentrations reported herein represent no threat to vegetation, soils, wildlife, and visibility in the Class I area. Air concentrations are predicted to be below those which have been shown to damage SO_2-sensitive plants. Soil deposition of SO_2 would be expected to have little effect on the pH or sulfur content of the soil present in the preserve area.

Attachment 1 to this letter presents the approaches, methods, and results of the PSD increment consumption and AQRV analyses. Attachment 2 contains the data (e.g., construction or operating permit) to support the revised emission inventory.

Enclosed are the paper and disk copies of the ISCST model runs. If you have any questions concerning this analysis, please contact me at your earliest convenience.

Sincerely,

ww Vierday

W. W. Vierday, Manager
Environmental Programs - Licensing

Enclosures

cc: K. F. Kosky (KBN)

pag/JAG.Fancy.Let

cc: J. Heron
C. Holladay, C. Dist.
A. Zahm, EPA
J. Harper, EPA
C. Shaver, NPS

ATTACHMENT 1

Prevention of Significant Deterioration (PSD) Class I Increment Consumption and Air Quality Related Values (AQRV) Analyses of the Proposed Combustion Turbines at the Florida Power Corporation's (FPC) Intercession City Facility

1.0 INTRODUCTION

KBN Engineering and Applied Sciences, Inc. (KBN) has performed air quality analyses to determine the impact of sulfur dioxide (SO_2) concentrations on the Chassahowitzka National Wilderness Area (NWA) due to emissions of the proposed combustion turbines at Florida Power Corporation's (FPC) Intercession Facility. The following sections present the approaches, methods, and results of the respective Prevention of Significant Deterioration (PSD) Class I increment consumption and air quality related values (AQRV) analyses.

2.0 PREVENTION OF SIGNIFICANT DETERIORATION CLASS I INCREMENT ANALYSIS

An air quality modeling analysis was performed to determine the maximum SO_2 PSD Class I increment consumption at the Chassahowitzka PSD Class I area. This analysis included modeling with the Industrial Source Complex Short-Term (ISCST) model using the SO_2 emissions from FPC's proposed project at Intercession City with a revised inventory of other increment consuming major and minor sources. Based on the use of the revised inventory, the maximum concentrations are predicted to comply with the PSD Class I increments with the ISCST model. Therefore, the potential use of the MESOPUFF II model, which has been proposed for this project, is not warranted at this time.

The original modeling inventory of PSD increment affecting sources considered in the analysis is presented in Table 1. This inventory was provided to KBN by the Florida Department of Environmental Regulation (FDER). Several modifications have been made to this inventory which are based on updated information made available to KBN. These modifications, shown in Table 2, are as follows:

1. Florida Crushed Stone--the operating temperature and emissions were updated based on information in the final order modifying the conditions for certification.
2. TECO Big Bend Unit 4--stack height, stack diameter, exit gas velocity, and UTM coordinates were updated based on recent information provided by TECO.

3. TECO Big Bend Units 1 and 2--these units share a common stack, therefore, their exit gas volumes were combined. Temperature, exit gas velocity, and UTM coordinates were updated based on information provided by TECO.
4. Dixie Lime and Stone Company--these sources were removed from the inventory since all source permits were canceled in December 1988.
5. Dairy Service Corporation--these sources were removed from the inventory since the permit was originally issued before the minor source baseline date.
6. Asphalt Pavers--the current source in the inventory was identified as Asphalt Pavers No. 4. The Deltona plant from the original inventory is now known as Asphalt Pavers No. 3. The source and emission data have been updated for both units. Updated operating data were based on stack tests performed by Koogler and Associates (Koogler), Gainesville, Florida. Also, the Asphalt Pavers No. 4 unit was assumed to operate for 12 hours each day, 6 a.m. to 6 p.m.
7. Chemical Lime Boilers 1 and 2--These sources were removed from the inventory since the boilers were never permitted for this site.
8. Agrico--this source was added to the inventory since it is currently undergoing permit review by Florida Department of Environmental Regulation (FDER). The PSD Class I increment consumption analysis was performed with and without this facility considered in the modeling.

Documentation for these updates is provided in Attachment 2.

In addition to these updates, minor sources from Sumter, Citrus, Hernando, and Pasco Counties were added to the inventory and also are presented in Table 2. The inventory of minor sources and some support documentation was originally provided to KBN by Koogler. The construction and/or operating permits for most of these sources were obtained by KBN from FDER Southwest District Office in Tampa, and reviewed to determine consistency with data obtained from Koogler. If the stack and operating data from the current construction or operating permit did not match those provided by Koogler, information from the permit was used in the modeling analysis (see Attachment 2 for copies of permits).

For asphalt batch units, the SO_2 emissions were reduced by 50 percent due to SO_2 attenuation by adsorption on the alkaline aggregate. This emission reduction is based on stack tests performed by Koogler which demonstrated that the measured SO_2 emissions from the stack tests were more

than 50 percent lower than the potential SO_2 emissions calculated from fuel use and known sulfur content in the fuel. Also, emission factors for a conventional asphaltic concrete plant, presented in the U.S. Environmental Protection Agency (EPA) document, "Compilation of Air Pollutant Emission Factors", AP-42, September 1990, indicate that the SO_2 may be reduced 50 percent due to adsorption. Therefore, the emission rates used in the modeling for Asphalt Pavers No. 3, Asphalt Pavers No. 4, Oman Construction, Overstreet Paving, and Couch Construction (Odessa and Zephyrhills) are 50 percent of the emission rates presented in the permits that were calculated from fuel use data.

SO_2 impacts were predicted using the ISCST model at 13 discrete receptors surrounding the PSD Class I area. These receptors were used by FDER and previously submitted for the FPC DeBary project. The impacts were predicted using a 5-year meteorological record (1982 through 1986) of surface and mixing height data from the National Weather Service (NWS) stations in Orlando and Ruskin, respectively.

Maximum predicted impacts for the 5 years of meteorological data are presented in Table 3. The results are presented which include and exclude the Agrico facility from the emission inventory. The overall highest, second-highest 3- and 24-hour impacts due to all sources, including Agrico, are predicted to be 19.3 micrograms per cubic meter ($\mu g/m^3$) and 4.87 $\mu g/m^3$, respectively. The overall maximum annual average concentration is predicted to be 0.37 $\mu g/m^3$. The overall highest, second-highest 3- and 24-hour impacts due to all sources, excluding Agrico, are predicted to be 19.3 $\mu g/m^3$ and 4.72 $\mu g/m^3$, respectively. The overall maximum annual average concentration is predicted to be 0.36 $\mu g/m^3$. These impacts are below the SO_2 PSD Class I increment values.

3.0 AIR QUALITY RELATED VALUE ANALYSIS

3.1 POTENTIAL IMPACTS ON VEGETATION

The Chassahowitzka NWA is characterized by vegetation which includes flatwoods, brackish-water, marine, and halophytic terrestrial species. Predominant tree species are slash pine, laurel oak, sweetgum, and palm. Other plants in the preserve include needlegrass rush, seashore saltgrass, marsh hay, and red mangrove.

SO_2 concentrations at elevated levels have long been known to cause injury to plants. Acute SO_2 injury usually develops within a few hours or days of exposure and symptoms include marginal,

flecked, and/or intercoastal necrotic areas which appear water-soaked and dullish green initially. This injury generally occurs to younger leaves. Chronic injury usually is evident by signs of chlorosis, bronzing, premature senescence, reduced growth and possible tissue necrosis (EPA, 1982). Phytotoxic symptoms demonstrated by plants can occur as low as 88 $\mu g/m^3$ (USDHEW, 1971). However, this occurs with the more primitive plants (i.e., mosses, ferns, lichens).

Many studies have been conducted to determine the effects of high concentration, short-term SO_2 exposure on natural community vegetation. Sensitive plants include ragweed, legumes, blackberry, southern pine, and red and black oak. These species are injured by exposure to 3-hour SO_2 concentrations from 790 to 1,570 $\mu g/m^3$. Intermediate plants include locust and sweetgum. These species are injured by exposure to 3-hour SO_2 concentrations from 1,570 to 2,100 $\mu g/m^3$. Resistant species (injured at concentrations above 2,100 $\mu g/m^3$ for 3 hours) include white oak and dogwood (EPA, 1982).

A study of native Floridian species (Woltz and Howe, 1981) demonstrated that cypress, slash pine, live oak, and mangrove exposed to 1,300 $\mu g/m^3$ SO_2 for 8 hours were not visibly damaged. This supports the levels cited by other researchers on the effects of SO_2 on vegetation. A corroborative study (McLaughlin and Lee, 1974) demonstrated that approximately 20 percent of a cross-section of plants ranging from sensitive to tolerant were visibly injured at 3-hour SO_2 concentrations of 920 $\mu g/m^3$.

In order to assess the total air quality impacts at the Class I area that can be compared to the reported effects levels, the predicted impacts due to the PSD increment affecting sources were added to background concentrations applicable to the 3-hour, 24-hour, and annual averaging periods. The background concentrations are assumed to be representative of impacts from sources not modeled and available from existing ambient monitoring data. In this analysis, ambient data collected in 1990 from a monitoring station (Station No. 0580-005-J02) located about 20 kilometers (km) from the Class I area were used to represent background concentrations. The annual concentration of 7 $\mu g/m^3$ and second-highest 3-hour and 24-hour concentrations of 248 and 53 $\mu g/m^3$, respectively, were assumed to represent background concentrations.

By adding the maximum predicted 3-hour SO_2 concentration of 19.3 $\mu g/m^3$ to the assumed background SO_2 concentration of 248 $\mu g/m^3$, a maximum total SO_2 concentration of 267 $\mu g/m^3$ would be expected in the Class I area. By comparing this concentration to those causing injury to

native species, the SO_2-sensitive species (or more tolerant species) would not be damaged by the maximum predicted concentrations. By comparison with concentrations that cause plant injury, the maximum predicted SO_2 concentration of 248 $\mu g/m^3$ is approximately 31 percent of the most conservative concentration (i.e., 790 $\mu g/m^3$) that causes injury to SO_2-sensitive species.

The maximum total 24-hour and annual SO_2 concentrations of 58 and 7.4 $\mu g/m^3$, respectively, that would be predicted within the Class I area represent levels which are lower than those known to cause damage to test species. Jack pine seedlings exposed to SO_2 concentrations from 470 to 520 $\mu g/m^3$ for 24 hours demonstrated inhibition of foliar lipid synthesis; however, this inhibition was reversible (Malhotra and Kahn, 1978). Black oak exposed to 1,310 $\mu g/m^3$ SO_2 for 24 hours a day for 1 week demonstrated a 48 percent reduction in photosynthesis (Carlson, 1979). By comparison of these levels, it is apparent that the maximum predicted 24-hour concentrations are well below the concentrations that cause damage in SO_2-sensitive plants. The maximum annual concentration of 0.4 $\mu g/m^3$ due to the PSD sources adds slightly to the background levels and poses a minimal threat to area vegetation.

3.2 POTENTIAL IMPACTS ON SOILS

The majority of the soil in the Class I area is classified as Weekiwachee--Durbin muck. This is an euic, hyperthermic typic sufihemist that is characterized by high levels of sulfur and organic matter. This soil is flooded daily with the advent of high tide and the pH ranges between 6.1 and 7.8. The upper level of this soil may contain as much as 4 percent sulfur (USDA, 1991).

The greatest threat to soils from increased SO_2 deposition is a decrease in pH or an increase of sulfur to levels considered unnatural or potentially toxic. Although ground deposition was not calculated, it is evident that the amount of SO_2 deposited would be inconsequential in light of the inherent sulfur content. The regular flooding of these soils by the Gulf of Mexico regulates the pH and any rise in acidity in the soil would be buffered by this activity.

3.3 POTENTIAL IMPACTS ON WILDLIFE

The predicted SO_2 concentrations are well below the lowest observed effects levels in animals (Newman and Schreiber, 1988). Given these conditions, the proposed source's emissions poses no risk to wildlife. Because predicted levels are below those known to cause effect to vegetation, there is also no risk.

3.4 VISIBILITY IMPAIRMENT ANALYSIS

A visibility impairment analysis was performed to determine the potential adverse plume visibility effects of the proposed turbines' emissions on the Class I area. The analysis was based on using the screening approach suggested in the "Workbook for Plume Visual Impact Screening and Analysis (EPA, 1988), which has been computerized by EPA in a program called the VISCREEN model. The VISCREEN model is currently recommended for use by EPA to assess visual plume impacts in regulatory applications. The model can be applied in successive levels of screening (i.e., Levels 1, 2, and 3). If the Level-1 screening calculations demonstrate that during worst-case meteorological conditions a plume is imperceptible or, if perceptible, is not likely to be considered objectionable (i.e., "adverse" or "significant" in the language of the EPA PSD and visibility regulations), further analysis of plume visual impact would not be required as part of the air quality review of the source.

For this analysis, a Level-1 screening analysis was performed. The input parameters and results of the proposed turbines' potential visibility impairment at the Class I area are presented in Table 4. The emission rates are based on the maximum short-term emission rates for each turbine. The other parameters input to the model were based upon default values given in the Workbook and incorporated in the computer model. As shown in Table 4, the proposed emissions are calculated to be below the Level-1 visibility screening criteria. As a result, it is unlikely that emissions from the proposed turbines will cause adverse visibility impairment in the Class I area of the Chassahowitzka National Wilderness Area.

4.0 REFERENCES

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Table 1. Summary of SO2 PSD Emission Sources and Associated Stack and Operating Data as Provided by FDER

ISCST Source Number	Source Description	UTM Coordinates (m)		Stack Data (m)		Operating Data		SO2 Emission Rate (g/s)
		East	North	Height	Diameter	Temperature (K)	Velocity (m/sec)	
99002	FPC/DeBary Prop.Turbines at 20F	467500	3197200	15.2	4.21	819.8	56.21	466.4
99005	FPC/Int.City Prop 7EA Turbines	446300	3126000	15.2	4.21	819.8	56.21	310.9
99008	FPC/Int.City Prop 7FA Turbines	446300	3126000	15.2	7.04	880.8	32.07	276.1
1	Florida Crushed Stone Kiln	360008	3162398	97.6	4.88	381.2	13.71	121.6
6	CF Ind. Baseline C	388000	3116000	60.3	2.44	353.0	16.40	-50.4
7	CF Ind. Proposed C	388000	3116000	60.3	2.44	353.0	17.77	54.6
9	CF Ind. Baseline D	388000	3116000	60.3	2.44	353.0	16.40	-50.4
10	CF Ind. Proposed D	388000	3116000	60.3	2.44	353.0	17.77	54.6
22	Florida Mining & Materials	356200	3169900	27.4	4.88	470.2	7.48	1.45
30	TECO Big Bend- Unit 4	361500	3075000	150.3	7.36	342.2	20.10	654.7
31	TECO Big Bend- Unit 1 (24-hr)	361600	3075000	149.4	7.32	405.0	13.71	-1218
32	TECO Big Bend- Unit 2 (24-hr)	361600	3075000	149.4	7.32	405.0	12.80	-1218
33	TECO Big Bend- Unit 3 (24-hr)	361600	3075000	149.4	7.32	410.0	14.33	-1218
40	Pasco County RRF	347100	3139200	83.8	3.05	394.3	15.70	14.1
50	DLS Kiln 2	397200	3182600	21.4	1.41	391.2	12.70	1.3
51	DLS Lime Dryer	397200	3182600	9.3	1.21	329.2	13.00	7.5
52	DLS Kiln 1	397200	3182600	21.1	1.21	391.2	13.70	1.3
61	Evans Packing	383300	3135800	12.3	0.4	466.2	9.20	0.2
70	Asphalt Pavers	361400	3168400	8.5	1.21	366.2	17.10	7.4
81	Dairy Service- boiler	364200	3158300	9.3	0.6	477.2	10.60	4.7
82	Dairy Service- dryer	364200	3158300	18.4	0.8	336.2	12.50	4.7
83	Deltona	359800	3164000	7.6	1.81	347.2	5.00	1.4
89	Chem Lime boilers 1 & 2	359400	3162300	19	0.5	314.2	11.30	0.2
90	Lakeland Utilities CT	409185	3102754	30.5	5.79	783.2	28.22	29.11
91	IMC SAP #1,2,3 Baseline	396600	3078900	61	2.6	350.0	14.28	-170.1
92	IMC SAP #1,2,3 Projected	396600	3078900	61	2.6	350.0	15.31	182.85
93	IMC SAP #4,5 Projected	396600	3078900	60.7	2.6	350.0	15.31	121.9
94	IMC DAP	396600	3078900	36.6	1.83	319.1	20.15	5.54
101	Pasco Co. Cogeneration Facil.	385600	3139000	30.5	3.35	384.3	17.13	5.04
102	Lake Co. Cogeneration Facil.	434000	3198800	30.5	3.35	384.3	17.13	5.04

Table 2. Summary of SO2 Emission Source Stack and Operating Data Used in the Modeling Analysis (Metric Units)

ISCST Source Number	Source Description	UTM Coordinates(m)		Stack Data (m)		Operating Data		Modeled Emissions (g/sec)
		East	North	Height	Diameter	Temperature (K)	Velocity (m/sec)	
99002	FPC/Debary Prop Turbines	467500.	3197200.	15.2	4.21	819.8	56.21	466.40
99005	FPC/Int. City Prop Turbines	446300.	3126000.	15.2	4.21	819.8	56.21	310.90
99008	FPC/Int. City Prop Turbines	446300.	3126000.	15.2	7.04	880.8	32.07	276.10
1	Florida Crushed Stone CPL	360008.	3162398.	97.6	4.88	442.0	23.23	98.40
6	CF Ind. Baseline C	388000.	3116000.	60.3	2.44	353.0	16.40	-50.40
7	CF Ind. Proposed C	388000.	3116000.	60.3	2.44	353.0	17.77	54.60
9	CF Ind. Baseline D	388000.	3116000.	60.3	2.44	353.0	16.40	-50.40
10	CF Ind. Proposed D	388000.	3116000.	60.3	2.44	353.0	17.77	54.60
22	Florida Mining & Materials	356200.	3169900.	27.4	4.88	470.2	7.48	1.45
30	TECO Big Bend- Unit 4	361900.	3075000.	149.4	7.32	342.2	19.81	654.70
31	TECO Big Bend- Units 1&2	361900.	3075000.	149.4	7.32	422.0	28.65	-2436.00
33	TECO Big Bend- Unit 3	361900.	3075000.	149.4	7.32	418.0	14.33	-1218.00
40	Pasco County RRF	347100.	3139200.	83.8	3.05	394.3	15.70	14.10
61	Evans Packing	383300.	3135800.	12.3	0.40	466.2	9.20	0.20
70	Asphalt Pavers No. 4	361400.	3168400.	8.5	1.08	357.4	10.95	2.25
71	Asphalt Pavers No. 3	359900.	3162400.	12.2	1.37	377.0	10.58	2.25
90	Lakeland Utilities CT	409185.	3102754.	30.5	5.79	783.2	28.22	29.11
91	IMC SAP #1,2,3 Baseline	396600.	3078900.	61.0	2.60	350.0	14.28	-170.10
92	IMC SAP #1,2,3 Projected	396600.	3078900.	61.0	2.60	350.0	15.31	182.85
93	IMC SAP #4,5 Projected	396600.	3078900.	60.7	2.60	350.0	15.31	121.90
94	IMC DAP	396600.	3078900.	36.6	1.83	319.1	20.15	5.54
101	Proposed Pasco Co. Cogen.	385600.	3139000.	30.5	3.35	384.3	17.13	5.04
102	Proposed Lake Co. Cogen.	434000.	3198800.	30.5	3.35	384.3	17.13	5.04
250	FDOC Boiler #3	382200.	3166100.	9.1	0.61	478.0	4.57	2.99
260	E. R. Jahna (lime dryer)	386700.	3155800.	10.7	1.83	327.0	8.99	0.82
270	Oman Const (asphalt)	359800.	3164900.	7.6	1.83	347.0	6.29	2.09
280	Dris Paving (asphalt)	340600.	3119200.	12.2	3.05	339.0	6.47	0.23
290	Overstreet Pav. (asphalt)	355900.	3143700.	9.1	1.30	408.0	16.00	3.67
300	New Port Richey Hosp Blr#1	331200.	3124500.	11.0	0.31	544.0	3.88	0.06
310	New Port Richey Hosp Blr#2	331200.	3124500.	11.0	0.31	544.0	3.88	0.03
320	Hosp Corp of Am Boiler #1	333400.	3141000.	11.0	0.31	533.0	4.00	0.08
330	Hosp Corp of Am Boiler #2	333400.	3141000.	11.0	0.31	533.0	4.00	0.08
340	Couch Const-Odessa (asphalt)	340700.	3119500.	9.1	1.40	436.0	22.30	7.25
350	Couch Const-Zephyrhills (asphalt)	390300.	3129400.	6.1	1.38	422.0	21.00	3.54
400	Agrico Baseline	407500.	3071300.	45.7	1.60	350.0	26.40	-75.60
410	Agrico Proposed	407500.	3071300.	45.7	1.60	350.0	39.06	113.50

OUC Stanton 1
OUC Stanton 2

Table 3. Maximum Predicted SO2 Concentrations from the Screening Analysis for Comparison to PSD Class I Increments

Averaging Period	Maximum Concentration ($\mu g/m^3$)	Receptor Location (UTM) East (km)	Receptor Location (UTM) North (km)	Period Julian Day	Period Hour Ending	Period Year
>> Including Agrico Source <<						
3-Hour*	19.3	341.1	3183.4	107	21	1982
	18.0	342.0	3174.0	251	21	1983
	19.3	343.7	3178.3	140	24	1984
	18.1	342.4	3180.6	242	3	1985
	18.7	341.1	3183.4	298	21	1986
24-Hour*	4.29	343.7	3178.3	92	24	1982
	4.61	342.0	3174.0	104	24	1983
	4.34	342.0	3174.0	144	24	1984
	4.13	339.0	3183.4	252	24	1985
	4.87	342.0	3174.0	343	24	1986
Annual	0.31	343.7	3178.3	-	-	1982
	0.18	331.5	3183.4	-	-	1983
	0.37	342.0	3174.0	-	-	1984
	0.20	340.3	3165.7	-	-	1985
	0.26	342.0	3174.0	-	-	1986
>> Excluding Agrico Source <<						
3-Hour*	19.3	341.1	3183.4	107	21	1982
	18.0	342.0	3174.0	251	21	1983
	19.3	343.7	3178.3	140	24	1984
	18.1	342.4	3180.6	242	3	1985
	18.7	341.1	3183.4	298	21	1986
24-Hour*	4.27	343.7	3178.3	92	24	1982
	4.59	342.0	3174.0	104	24	1983
	4.34	342.0	3174.0	144	24	1984
	4.11	339.0	3183.4	252	24	1985
	4.72	342.0	3174.0	343	24	1986
Annual	0.29	343.7	3178.3	-	-	1982
	0.17	331.5	3183.4	-	-	1983
	0.36	342.0	3174.0	-	-	1984
	0.18	340.3	3165.7	-	-	1985
	0.25	342.0	3174.0	-	-	1986

Note: - = Not applicable.
$\mu g/m^3$ = micrograms per cubic meter.
km = kilometers.

* Highest, second-highest concentrations predicted for this averaging period.

Table 4. Visual Effects Screening Analysis for the Proposed Combustion Turbines at the FPC Intercession City on the Chassahowitzka PSD Class I Area (Output from the VISCREEN Model)

Visual Effects Analysis: Level-1 Screening

Input Emissions for

Particulates	94.00	LB /HR
NOx (as NO2)	1531.00	LB /HR
Primary NO2	.00	LB /HR
Soot	.00	LB /HR
Primary SO4	407.76	LB /HR

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	25.00 km
Source-Observer Distance:	113.00 km
Min. Source-Class I Distance:	113.00 km
Max. Source-Class I Distance:	133.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	84.	113.0	84.	2.00	.116	.05	.001
SKY	140.	84.	113.0	84.	2.00	.080	.05	-.004
TERRAIN	10.	84.	113.0	84.	2.00	.038	.05	.000
TERRAIN	140.	84.	113.0	84.	2.00	.011	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	75.	109.4	94.	2.00	.120	.05	.001
SKY	140.	75.	109.4	94.	2.00	.083	.05	-.004
TERRAIN	10.	65.	105.4	104.	2.00	.055	.05	.000
TERRAIN	140.	65.	105.4	104.	2.00	.015	.05	.000

ATTACHMENT 2

Support Material for Revised SO_2 Emission Inventory

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

IN RE:	
FLORIDA CRUSHED STONE COMPANY PROPOSED BROOKSVILLE POWER PLANT MODIFICATION OF TERMS AND CONDITIONS OF CERTIFICATION NO. PA 82-17 HERNANDO COUNTY	OGC FILE NO: 84-0674

CPL EMISSION LIMITS

FINAL ORDER MODIFYING
CONDITIONS OF CERTIFICATION

The Florida Department of Environmental Regulation, after notice and opportunity for hearing, modifies the conditions of certification for the Florida Crushed Stone Power Plant pursuant to Section 403.516(1), Florida Statutes, and Section XXV of the General Conditions of Certification, which delegated modifications of emission limitation conditions to the Department.

1. On August 9, 1984, Florida Crushed Stone Company submitted a letter to the Department requesting modification of the existing Conditions of Certification for its proposed Brooksville Power Plant to allow construction of a fluidized bed lime kiln in conjunction with the power boiler to reduce sulfur oxide emissions.

2. On April 19, 1985, a Notice of Request for Modification of Power Plant Certification was published in the Florida Administrative Weekly with a provision that a party to the certification proceeding would have until June 3, 1985 in which to respond to the requested modification by petitioning for an administrative hearing. All other parties were given until 14 days from the date of publication for file such a petition. No petition was filed and no hearing was requested. Therefore, the Department adopts the proposed agency action referenced in the Notice as final.

3. After review of the request and existing data, the Department grants relief to Florida Crushed Stone Company by making the following modifications to the conditions of certification.

a. Condition I.A. shall be changed to read:

A. Emission Limitations

1. Stack emissions from the power plant boiler only or power boiler and lime plant shall not exceed the following site specific limitations when burning coal:

a. SO_2 - 1.2 lb. per million Btu heat input, maximum two-hour average, and ~~915~~ 770 lb. per hour, maximum three-hour average.

b. NO_x - 0.7 lb. per million Btu heat input, averaging time per Rule 17-2.700, FAC, not to exceed 846 lb/hr.

c. Particulates - 0.03 lb. per million Btu heat input, averaging time per Rule 17-2.700, FAC.

d. Visible emissions - 20% opacity, 6-minute average, except for one 6-minute period per hour of not more than 27% opacity.

2. Stack emission from the combined cement plant, lime plant and power plant boiler shall not exceed the following site specific limitations:

a. SO_2 - 1.2 lb. per million Btu heat input, maximum two-hour average, and ~~965~~ 781 lb. per hour, maximum three-hour average.

b. NO_x - 0.7 lb. per million Btu heat input plus 2.9 lb. per ton of kiln feed (dry basis), averaging time per Rule 17-2.700, FAC, not to exceed 1205 lb/hr.

b. Condition I.A.5. shall be changed to read:

5. Particulate emissions from bag filter exhausts from the coal and fly ash handling systems (excluding those facilities covered by Condition I.A.4.c. above) shall be limited to 0.02 gr/acf. Emissions from lime and limestone handling and storage handling facilities shall not exceed 0.015 gr/acf. A visible

CPL EMISSION LIMITS

TABLE 3

SUMMARY OF STACK GAS FLOW
AND STACK GAS MOISTURE MEASUREMENTS

FLA. CRUSHED STONE
C/P/L/ STACK
OCT. 14-16, 1991

DATE	TIME	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter Conc. (gr/dscf)	Particulate Matter Emission Rate (Lbs/Hr)
10/14/91	0942	557461	308.0	8.6	0.0000	0.00
10/15/91	1015	544236	363.0	6.0	0.0000	0.00
10/16/91	0750	606389	339.0	5.1	0.0000	0.00
Average		569362	336.7	6.6	0.0000	0.00

MESOPTS4
11/11/91

Table 4. Summary of SO2 PSD Emission Sources and Associated Stack and Operating Data to be Used in the Modeling Analysis

ISCST Source Number	Source Description	UTM Coordinates (m) East	UTM Coordinates (m) North	Stack Data (m) Height	Stack Data (m) Diameter	Operating Data Temperature (K)	Operating Data Velocity (m/sec)	SO2 Emission Rate (g/s)	
~~99002~~	FPC/DeBary Prop.Turbines at 20F	467500	3197200	15.2	4.21	819.8	56.21	466.4	
~~99005~~	FPC/Int.City Prop 7EA Turbines	446300	3126000	15.2	4.21	819.8	56.21	310.9	
~~99008~~	FPC/Int.City Prop 7FA Turbines	446300	3126000	15.2	7.04	880.8	32.07	276.1	
1	Florida Crushed Stone ~~Kiln~~	360008	3162398	97.6	4.88	~~381.2~~ 444.3	~~13.71~~ 23.25	~~121.6~~ 98.4	
6	CF Ind. Baseline C	388000	3116000	60.35	2.44	353.0	16.40	-50.4	stack
7	CF Ind. Proposed C CPL	388000	3116000	60.35	2.44	353.0	17.77	54.6	stack
9	CF Ind. Baseline D	388000	3116000	60.35	2.44	353.0	16.40	-50.4	stack
10	CF Ind. Proposed D	388000	3116000	60.35	2.44	353.0	17.77	54.6	stack
22	Florida Mining & Materials	356200	3169900	27.4	4.88	470.2	7.48	1.45	
30	TECO Big Bend- Unit 4	361500	3075000	150.3	7.36	342.2	20.10	654.7	
31	TECO Big Bend- Unit 1 (24-hr)	361600	3075000	149.4	7.32	405.0	13.71	-1218	
32	TECO Big Bend- Unit 2 (24-hr)	361600	3075000	149.4	7.32	405.0	12.80	-1218	
33	TECO Big Bend- Unit 3 (24-hr)	361600	3075000	149.4	7.32	410.0	14.33	-1218	
40	Pasco County RRF	347100	3139200	83.8	3.05	394.3	15.70	14.1	
~~50~~	~~DLS Kiln 2~~	~~397200~~	~~3182600~~	~~21.4~~	~~1.41~~	~~391.2~~	~~12.70~~	~~1.3~~	Permits Expired
~~51~~	~~DLS Lime Dryer~~	~~397200~~	~~3182600~~	~~9.3~~	~~1.21~~	~~329.2~~	~~13.00~~	~~7.5~~	Permits Expired
~~52~~	~~DLS Kiln 1~~	~~397200~~	~~3182600~~	~~21.1~~	~~1.21~~	~~391.2~~	~~13.70~~	~~1.3~~	Permits Expired
61	Evans Packing	383300	3135800	12.3	0.4	466.2	9.20	0.2	
70	Asphalt Pavers No. 4	361400	3168400	8.5	~~1.21~~ 1.08	~~366.2~~ 357.4	~~17.18~~ 10.95	~~2.25~~ 7.4	— FL Rock
~~81~~	~~Dairy Service- boiler~~	~~364200~~	~~3158300~~	~~9.3~~	~~0.6~~	~~477.2~~	~~10.60~~	~~4.7~~	
~~82~~	~~Dairy Service- dryer~~	~~364200~~	~~3158300~~ (24)	~~18.4~~	~~0.8~~	~~356.2~~	~~12.50~~	~~4.7~~	
83	~~Suncoast~~ Asphalt Pavers No.3	~~359800~~	~~3164800~~	~~7.6~~ 12.2	~~1.81~~ 1.37	~~347.2~~ 372.0	~~5.00~~ 10.58	~~2.25~~ 1.6	— FC S
~~89~~	~~Chem-Lime boilers 1 & 2~~	~~359400~~	~~3162300~~	~~19~~	~~0.3~~	~~314.2~~	~~11.30~~	~~0.2~~	
90	Lakeland Utilities CT	409185	3102754	30.5	5.79	783.2	28.22	29.11	
91	IMC SAP #1,2,3 Baseline	396600	3078900	61	2.6	350.0	14.28	-170.1	stack
92	IMC SAP #1,2,3 Projected	396600	3078900	61	2.6	350.0	15.31	182.85	stack
93	IMC SAP #4,5 Projected	396600	3078900	60.7	2.6	350.0	15.31	121.9	stack
94	IMC DAP	396600	3078900	36.6	1.83	319.1	20.15	5.54	
101	Pasco Co. Cogeneration Facil.	385600	3139000	30.5	3.35	384.3	17.13	5.04	
102	Lake Co. Cogeneration Facil.	434000	3198800	30.5	3.35	384.3	17.13	5.04	
110	Aspire Baseline	407500	3071300	45.73	1.60	350.0	26.40	-75.6	stack
111	Aspire Proposed	407500	3071300	45.73	1.60	350.0	39.26	+113.5	stack

Sources 50 - 52 - Dixie Lime & Stone - plant not operating; permits expired 2-3 years ago

Sources 81 - 82 - New Inter Floridana - dryer and boiler permitted in 1968; no modifications since that time

Source 89 - Chemical Lime - There were a lime calciner at this site but never boilers. The calciners have been retired. ~~with~~ All calcining is now done at Source 83

Source 83 - New Asphalt Pavers Plant No. 3

7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

BOB GRA
GOVER
JACOB D. V.
SECRET.
DAVID PUCH
DISTRICT MANA

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT

APPLICANT:

Dixie Lime & Stone Company
P.O. Drawer 217
Sumterville, Fla. 33585

PERMIT/CERTIFICATION NO. AO60-24513

COUNTY: Sumter

PROJECT: Limestone Dr

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorize perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto made a part hereof and specifically described as follows:

For the operation of a 8' x 32' limestone dryer with a process input rate of 100 TPH of limestone fired with #5 fuel oil. Emissions are controlled by a multicone separator followed by a wet venturi scrubber. Located at: north of S.R. 470, 1 mile east of U.S. 301, Sumterville, Sumter County. UTM: 17 East 397.2 North 3182.6

Replaces Permit NO: AO60-2303 NEDS NO: 0001 Point ID: 05

Expires: January 2, 1985

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are b ing upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby pl

K

DIXIE LIME AND STONE COMPANY

Subsidiary of M.J. Stavola Industries, Inc.

PUT ON INACTIVE. AIR 020
10/14/88 GEC 40 FA 60 00

October 3, 1988

Mr. W.C. Thomas
District Air Engineer
Department of Environmental Regulation
4520 Oak Fair Blvd.
Tampa, FL 33610-9544

Dear Mr. Thomas:

On February 22, 1988, Dixie Lime and Stone Company notified your office that the lime kilns were still temporarily shut down.

At this time they are shut down permanently and we wish to cancel all of our existing air permits. We have attached a list of these permits for your convenience.

Sincerely,

DIXIE LIME AND STONE COMPANY

Mel Keever
President

Attach.

MK/ch

OCT 0 6 1988

SOUTH WEST DISTRICT
TAMPA

P.O. Drawer 1209 Anthony FL 32617 904/629-9715

Florida Department of Environmental Regulation
Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561
Bob Martinez, Governor
Dale Twachtmann, Secretary
John Shearer, Assistant Secretary
Richard Garrity, Deputy Assistant Secretary

December 9, 1988

Mr. Mel Keever
President
Dixie Lime & Stone Company
Post Office Drawer 1209
Anthony, Florida 32617

Dear Mr. Keever:

Re: Sumter County - AP
Cancellation of Air Permits

In accordance with your letter of October 3, 1988, all the following listed permits at your facility are hereby cancelled.

A060-85091 -	No. 1 Kiln Exhaust Baghouse
A060-87268 -	No. 2 Kiln Exhaust Baghouse
A060-111649-	Lime Cooler Recuperator
A060-73993 -	"A" Screening Dust Collector
A060-73992 -	"B" Screening Dust Collector
A060-112662-	Lime Loadout and Scavenger System w/Baghouse
A060-112664-	Lime Crusher Material Handling System w/Baghouse
A060-85089 -	Coal Grinding System
A060-85089 -	No. 1 Lime Kiln Fine Coal Handling System
A060-85090 -	No. 2 Lime Kiln Fine Coal Handling System
A060-109685-	No. 1 Kiln Product Scavenger System
A060-109686-	No. 2 Kiln Product Scavenger System

Thank you for your cooperation in this matter.

Sincerely,

J. Harry Kerns

J. Harry Kerns, P.E.
District Air Engineer

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
POST OFFICE BOX 9205
500 EAST CENTRAL AVENUE
WINTER HAVEN, FLORIDA 33880

JOSEPH W. LANDERS JR.
SECRETARY

Oct. 30,1975
Hernando AP
Dairy Service Corp.

Bert E. Roper, Pres.,
Dairy Service Corp.,
P. O. Box 607,
Brooksville, Fla. 33512

Existing (Pre-baseline) Sources

Dear Sir:

Pursuant to your recent application, please find enclosed a permit (No.AC27-2901) dated 10-30-75 to construct/ ~~operate~~ the subject pollution source.

This permit will expire on Jan. 1,1976, and will be subject to the conditions, requirements, and restrictions checked or indicated otherwise in the attached sheet construction ~~/operation~~ Permit Conditions."

This permit is ussued under the authority of Florida Statute 403.061(16). The time limits imposed herein are a condition to this permit and are enforceable under Florida Statute 403.161. You are hereby placed on Notice that the Department will review this permit before the scheduled date of expiry and will seek court action for violation of the conditions and requirements of this permit.

You have ten days from the date of receipt hereof within which to seek a review of the conditions and requirements contained in this permit. Failure to file a written request to review or modify the conditions or requirements contained in this permit shall be deemed a waiver of any objections thereto.

Your continued cooperation in this matter is appreciated and in future communication please refer to your permit number.

Yours very truly,

J. H. Kerns, PE
Chief of Permitting

JHK/JLT/bbe
cc: Ralph W. Cook, PE.

This permit expires on 11-30-74

STATE OF FLORIDA
DEPARTMENT OF AIR AND WATER POLLUTION CONTROL

OPERATION PERMIT

FOR Dairy Service Corporation
P. O. Box 607
Brooksville, Florida 33512

PERMIT NO. AO-27-388 DATE 5-12-72

PURSUANT TO THE PROVISIONS OF SECTION 403.061 (16) OF CHAPTER 403 FLORIDA STATUTES AND CHAPTER 17-4 FLORIDA ADMINISTRATIVE CODE, THIS PERMIT IS ISSUED TO:
Mr. Bert Roper, President

FOR THE OPERATION OF THE FOLLOWING:
Fossil Fuel Steam Generator: 500 H. P., #6 Fuel oil without Controls.

LOCATED AT: (UTM:7364400E, 3158250N) South Main St.
Brooksville, Hernando Co., Florida

IN ACCORDANCE WITH THE APPLICATION DATED 3-1-71

AND IN CONFORMITY WITH THE STATEMENTS AND SUPPORTING DATA ENTERED THEREIN, ALL OF WHICH ARE FILED WITH THE DEPARTMENT AND ARE CONSIDERED A PART OF THIS PERMIT.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ITS ISSUANCE UNTIL REVOKED OR SURRENDERED* AND SHALL BE SUBJECT TO ALL LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT. *or 11-30-74, whichever is earlier.

W. E. Linne, Acting Chief
BUREAU OF PERMITTING

Vincent A. Stanton
EXECUTIVE DIRECTOR

FORM 1-I

NEDS 10 1740 052 0004

PARTICULATE MATTER EMISSION MEASUREMENTS

ASPHALT PLANT NO. 3

ASPHALT PAVERS, INC.
BROOKSVILLE, FLORIDA

Permit No. AO27-134775
(Expires August 27, 1992)

March 3, 1990

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

KOOGLER & ASSOCIATES

1.0 INTRODUCTION

Asphalt Pavers, Inc. owns and operates two asphalt batch plants near Brooksville, Florida. This report describes emission measurements conducted on the No. 3 plant on March 3, 1990. At Plant No. 3, aggregate is fed into a rotary dryer where it is dried and heated, then mixed with asphaltic cement in a batching tower.

Koogler & Associates, Environmental Services of Gainesville, Florida, conducted particulate matter emission measurements and visible emissions observations on the No. 3 plant, in accordance with EPA Methods 5 and 9 as described in 40CFR60, Appendix A. The purpose of the testing was to demonstrate compliance with the emission limiting requirement of Air Operating Permit No. A027-134775.

Prior to the test date, the Southwest District office of the Florida Department of Environmental Regulation (FDER) in Tampa, Florida was notified of the test schedules and testing methods. No representative of that office was at the plant site to witness test procedures or plant operations.

During the test period on March 3, 1990, the plant was operating at an average production rate of 100.3 tons per hour, as determined by plant personnel. This was the highest attainable production rate due to the high moisture content of the aggregate. The permitted rate for the plant is 150

2.0 PROCESS DESCRIPTION

The No. 3 asphalt batching plant operated by Asphalt Pavers, Inc. is a typical batch plant. The plant consists of an aggregate feed system, a rotary dryer for drying and heating the aggregate, a set of screens for removing oversized aggregate and a batching tower where the aggregate and asphaltic cement are mixed prior to being loaded into trucks. During the test period, the dryer was being fired with used oil at the rate of approximately 2.5 gallons per ton of product. The fuel analysis is included in the Appendix of this report.

Particulate matter emissions result from dust that is carried from the rotary dryer by combustion air and dust from the screens. The particulate matter from both sources is collected in a negative air system and passed through a mechanical dust collector. The particulate matter removed in this collector is returned to the batching tower as fines. The gas stream leaving the mechanical dust collector passes through a baghouse for further particulate matter control before it is exhausted to the atmosphere.

TABLE 1

SUMMARY OF SOURCE EMISSION TEST DATA

ASPHALT PAVERS
NO.3 PLANT BROOKSVILLE
MARCH 3, 1990

Run No.	Process Weight Rate (Tons/Hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter Conc. (gr/dscf)	Particulate Matter Emission Rate (Lbs/Hr)
1	102.0	21936	199.0	9.7	0.0247	4.64
2	101.0	19860	197.2	9.8	0.0185	3.14
3	98.0	19126	197.5	10.7	0.0265	4.35
Average	100.3	20307	197.9	10.0	0.0232	4.04
Allowable Particulate Matter Emission Rate (Chapter 17-2, Florida Administrative Code)					0.04	GR/SCF

28114 acfm

PARTICULATE MATTER EMISSION MEASUREMENTS

ASPHALT PLANT NO. 3

ASPHALT PAVERS, INC.
BROOKSVILLE, FLORIDA

Permit No. A027-134775
(Expires August 27, 1992)

July 18 and September 7, 1989

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

KOOGLER & ASSOCIATES

1.0 INTRODUCTION

Asphalt Pavers, Inc. owns and operates two asphalt batch plants near Brooksville, Florida. At Plant No. 3, aggregate is fed into a rotary dryer where it is dried and heated, then mixed with asphaltic cement in a batching tower.

On July 18 and September 7, 1989, Koogler & Associates, Environmental Services of Gainesville, Florida, conducted particulate matter emission measurements and visible emissions observations on the No. 3 plant, in accordance with EPA Methods 5 and 9 as described in 40CFR60, Appendix A. The purpose of the testing was to demonstrate compliance with the emission limiting requirement of Air Operating Permit No. A027-134775.

Prior to the test dates, the Southwest District office of the Florida Department of Environmental Regulation (FDER) in Tampa, Florida was notified of the test schedules and testing methods. Mr. Mirza Baig of that office was at the plant site during the September 7, 1989 test to witness test procedures and plant operations.

During the test periods on both July 18 and September 7, 1989, the plant was operating at an average production rate of 100 tons per hour, as determined by plant personnel. This was the highest attainable production rate due to the high moisture content of the aggregate. The permitted rate for the plant is 150 tons per hour. The maximum allowable particulate

2.0 PROCESS DESCRIPTION

The No. 3 asphalt batching plant operated by Asphalt Pavers, Inc. is a typical batch plant. The plant consists of an aggregate feed system, a rotary dryer for drying and heating the aggregate, a set of screens for removing oversized aggregate and a batching tower where the aggregate and asphaltic cement are mixed prior to being loaded into trucks. During the test period, the dryer was being fired with used oil at the rate of approximately 2.5 gallons per ton of product. The fuel analysis is included in the Appendix of this report.

Particulate matter emissions result from dust that is carried from the rotary dryer by combustion air and dust from the screens. The particulate matter from both sources is collected in a negative air system and passed through a mechanical dust collector. The particulate matter removed in this collector is returned to the batching tower as fines. The gas stream leaving the mechanical dust collector passes through a baghouse for further particulate matter control before it is exhausted to the atmosphere.

TABLE 2

SUMMARY OF SOURCE EMISSION TEST DATA

ASPHALT PAVERS / BROOKSVILLE,FLA.
NO.3 PLANT
SEPTEMBER 7,1989

Run No.	Process Weight Rate (Tons/Hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter Conc. (gr/dscf)	Particulate Matter Emission Rate (Lbs/Hr)
1	100.0	22819	232.9	16.2	0.0851	16.65
2	100.0	22657	230.7	17.3	0.0665	12.92
3	100.0	23041	239.3	18.0	0.0777	15.34
Average	100.0	22839	234.3	17.2	0.0764	14.97
Allowable Particulate Matter Emission Rate					0.04	(gr/dscf)

36271 acfm

Table 1

SUMMARY OF PARTICULATE MATTER EMISSIONS

ASPHALT PAVERS NO. 3 PLANT
BROOKSVILLE
7/18/89

Run No.	Process Weight Rate (Tons/Hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter	
					Conc. (gr/dscf)	Emission Rate (Lbs/Hr)
1	100.0	21181	216.4	19.0	.1277	23.24
2	100.0	22058	228.6	19.4	.0849	16.10
3	100.0	22541	224.3	19.2	.1443	27.94
Avg	100.0	21926	223.1	19.2	.1190	22.43

Allowable Particulate Matter Emission Rate = .04 (gr/dscf)

35107 acfm

PARTICULATE MATTER EMISSION MEASUREMENTS

ASPHALT PLANT NO. 4

ASPHALT PAVERS, INC.
BROOKSVILLE, FLORIDA

Permit No. A027-140282
(Expires February 2, 1993)

September 8, 1989

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

Note - In 1990 the plant was used to process contaminated soil at a throughput rate < 100 tph and at a fuel use rate lower than reported herein

I.0 INTRODUCTION

Asphalt Pavers, Inc. owns and operates two asphalt batch plants near Brooksville, Florida. At Plant No. 4, aggregate is fed into a rotary dryer where it is dried and heated, then mixed with asphaltic cement in a batching tower.

On September 8, 1989, Koogler & Associates, Environmental Services of Gainesville, Florida, conducted particulate matter emission measurements and visible emissions observations on the baghouse serving the aggregate dryer of Plant No. 4, in accordance with EPA Methods 5 and 9 as described in 40CFR60, Appendix A. The purpose of the testing was to demonstrate compliance with the emission limiting requirement of Air Operating Permit No. A027-140282.

Prior to the test date, the Southwest District office of the Florida Department of Environmental Regulation (FDER) in Tampa, Florida was notified of the test schedule and testing methods. Mr. Mirza Baig of that office was at the plant site during testing to witness test procedures and plant operations.

During the period of testing, the plant was operating at an average production rate of 100 tons per hour, as determined by plant personnel. The maximum allowable particulate matter concentration permitted in the stack gas by the New Source Performance Standards is 0.04 grains per dry standard cubic foot. Visible emissions are limited to 20 percent opacity.

2.0 PROCESS DESCRIPTION

The No. 4 asphalt batching plant operated by Asphalt Pavers, Inc. is a typical batch plant. The plant consists of an aggregate feed system, a rotary dryer for drying and heating the aggregate, a set of screens for removing oversized aggregate and a batching tower where the aggregate and asphaltic cement are mixed prior to being loaded into trucks. During the test period, the dryer was being fired with used oil at the rate of approximately 2.5 gallons per ton of product. The fuel analysis is included in the Appendix of this report.

Particulate matter emissions result from dust that is carried from the rotary dryer by combustion air and dust from the screens. The particulate matter from both sources is collected in a negative air system and passed through a mechanical dust collector. The particulate matter removed in this collector is returned to the batching tower as fines. The gas stream leaving the mechanical dust collector passes through a baghouse for further particulate matter control before it is exhausted to the atmosphere.

TABLE 1

SUMMARY OF SOURCE EMISSION TEST DATA

ASPHALT PAVERS / BROOKSVILLE,FLA.
NO.4 PLANT
SEPTEMBER 8,1989

Run No.	Process Weight Rate (Tons/Hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter Conc. (gr/dscf)	Particulate Matter Emission Rate (Lbs/Hr)
1	100.0	14079	185.4	18.3	0.0045	0.55
2	100.0	13823	181.2	20.1	0.0026	0.31
3	100.0	14759	185.8	17.8	0.0018	0.22
Average	100.0	14220	184.1	18.7	0.0030	0.36

Allowable Particulate Matter Emission Rate 0.04 (gr/dscf)

21337 acfm

TABLE 8.1-5. EMISSION FACTORS FOR SELECTED GASEOUS POLLUTANTS FROM A CONVENTIONAL ASPHALTIC CONCRETE PLANT STACK[a]

Material emitted[b]	Emission Factor Rating	Emission factor[c] g/Mg	Emission factor[c] lb/ton
Sulfur oxides (as SO_2)[d,e]	C	146S	0.292S
Nitrogen oxides (as NO_2)[f]	D	18	0.036
Volatile organic compounds[f]	D	14	0.028
Carbon monoxide[f]	D	19	0.038
Polycyclic organic material[f]	D	0.013	0.000026
Aldehydes[f]	D	10	0.02
Formaldehyde	D	0.075	0.00015
2-Methylpropanal (isobutyraldehyde)	D	0.65	0.0013
1-Butanal (n-butyraldehyde)	D	1.2	0.0024
3-Methylbutanal (isovaleraldehyde)	D	8.0	0.016

[a] Reference 16.
[b] Particulates, carbon monoxide, polycyclics, trace metals and hydrogen sulfide were observed in the mixer emissions at concentrations that were small relative to stack concentrations.
[c] Expressed as g/Mg and lb/ton of asphaltic concrete produced.
[d] Mean source test results of a 400 plant survey.
[e] Reference 21. S = % sulfur in fuel. SO_2 may be attenuated 50% by adsorption on alkaline aggregate.
[f] Based on limited test data from the single asphaltic concrete plant described in Table 8.1-6.

This has been confirmed several times in Florida

Documentation of
SO_2 sorption in
Asphalt plants

PARTICULATE MATTER AND SULFUR DIOXIDE EMISSION MEASUREMENTS AND VISIBLE EMISSIONS OBSERVATIONS REPORT

ASPHALT BATCH PLANT

PAN AMERICAN CONSTRUCTION COMPANY
MIAMI, FLORIDA

FDER Permit A013-153329

DERM Permit AP-0472-88A

October 23, 1991

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

KOOGLER & ASSOCIATES

During the test period, the plant was operating at an average production rate of 171 tons per hour. The particulate matter concentration in the stack gas averaged 0.0068 grains per dry standard cubic foot, the measured emission rate of sulfur dioxide averaged 0.10 pounds per hour, or less than 0.01 pounds per million BTU heat input. Visible emissions observations were conducted for a period of 30 minutes. During this period, no visible emissions were detected.

Based on the above data, it can be concluded that during the period of testing on October 23, 1991, the asphalt batch plant was operating in compliance with the emission limiting standards set forth by the Florida Department of Environmental Regulation in Permit A013-153329 and by Dade County in Permit AP-0472-88A.

Potential SO_2 emissions:

Fuel Use = 171 tph × 3.1 gal oil/ton

= 530 gal/hr

× 8.0 lb/gal

= 4240 lb fuel/hr

Potential SO_2 = (4240 lb fuel/hr)(0.004 × 2 lb SO_2 / lb fuel) (0.004 × 2 = % S in fuel oil)

= 33.9 lb/hr

Measured SO_2 emissions:

= 0.10 lb/hr

SO_2 Sorption

= (33.9 − 0.1)/33.9 >> 50%

KOOGLER & ASSOCIATES

2.0 PROCESS DESCRIPTION

The asphalt batch plant owned and operated by Pan American Construction Company is permitted to operate at a production rate of 195 tons per hour. The plant is a typical asphalt batch plant, consisting of an aggregate feed system, an oil-fired rotary dryer for drying and heating the aggregate, a set of screens for removing oversized aggregates and a pug mill to mix the heated aggregate and the liquid asphalt cement. During the test period, the dryer was fired with used oil at the rate of 3.1 gallons per ton of product. The fuel analysis, supplied by Precision Petroleum Labs, Inc., showed a sulfur content of 0.40 percent and a heating value of 144921 BTU per gallon. A density of 8.0 pounds per gallon was estimated, based on previous measurements.

Particulate matter emissions result from dust that is carried from the rotary dryer by the combustion gases and from dust generated at the screens. Dust from both of these sources is collected in a negative air system and passed through a mechanical dust collector. The particulate matter removed in this collector is returned to the batching tower as fines to be used in the process. The gas stream leaving the mechanical dust collector passes through a Standard Havens baghouse and is then exhausted to the atmosphere through a 36-inch by 54-inch stack.

The process weight rate of the plant was determined by plant personnel by weighing the material produced during the time of testing.

PRECISION
PETROLEUM LABS, INC.

CERTIFICATE OF ANALYSIS

INVOICE NO: 1252
P.O. NO:
LAB REF. NO: 9110-10
PRODUCT I.D.: NO. 5 BURNER FUEL
DATE RECEIVED: 10-4-91
AUTHORIZED BY: LEE SOWELL

TOTAL HALOGEN, PPM UOP-588	70.0
ORGANIC HALOGEN, PPM UOP-588	2.1
INORGANIC HALOGEN, PPM	67.9
GRAVITY API @ 60° F D-287	25.5
HEAT OF COMBUSTION BTU/GAL D-240	144,921
VISCOSITY SUS @ 100° F D-445	340.0
FLASH POINT, PMCC D-93	195°F
PCB'S, PPM	LESS THAN 1.0
SULFUR, WEIGHT% D-4294	0.40
HEAVY METALS BY TOXICITY, MG/LIT	
ARSENIC EPA-206.2	LESS THAN 0.01
CADMIUM EPA-213.1	LESS THAN 0.10
CHROMIUM EPA-218.1	0.15
LEAD EPA-239.1	1.82

DANIEL ZABIHI
LAB MANAGER

PRECISION PETROLEUM LABS, INC.'S RESPONSIBILITY FOR THE ABOVE ANALYSIS, OPINIONS OR INTERPRETATIONS IS LIMITED TO THE INVOICE AMOUNT.

TABLE 2

SUMMARY OF SULFUR DIOXIDE EMISSION MEASUREMENTS

PLANT : PAN AMERICN / MEDLEY, FLA.
BATCH PLANT

DATE : 10/23/91

Std. Temp. : 68 DEG. F
F-Factor : dscf/MMBtu

Run No.	Vm(std), dscf	lb/dscf	lb/MMBtu	ppm	ppm @3.0 %O2	lb/hr
1A	47.674	1.11E-07		0.67	1.96	0.18
1B						
Run Average	47.674	1.11E-07		0.67	1.96	0.18
2A	39.973	0.00E+00				0.00
2B						
Run Average	39.973	0.00E+00		0.00	0.00	0.00
3A	43.930	8.04E-08		0.48	1.35	0.12
3B						
Run Average	43.930	8.04E-08		0.48	1.35	0.12
Test Average	43.859	6.38E-08		0.38	1.11	0.10

Allowable Sulfur Dioxide Emission Rate = 0.55 LB/MMBTU

FACILITY ID: 40TPA600004

FACILITY INFORMATION RECORD

***** FACILITY INFORMATION *****

STATUS: A = ACTIVE DATE OF PERMANENT SHUTDOWN: .. / .. / .. # OF SRC: 002
OWNER: SUMTER CORRECTIONAL INST OWNER CODE: . = ...
NAME/LOC: ..... ZIP CODE: .....
CITY: BUSHNELL CITY CODE: .... MAJOR FAC: N (Y OR N)
TYPE: 99 = OTHER TABLE 500-1: . (Y OR N)
UTM ZONE: 17 EAST: 382 . 2 (KM) NORTH: 3166 . 1 (KM)
LATITUDE: 28 : 37 : 02 LONGITUDE: 82 : 12 : 30
CDS: . = ... VOC: . = ... FINAL COMPLIANCE DATE: ../../..
COMMENT: .....

***** OWNER/AUTHORIZED REPRESENTATIVE INFORMATION *****

NAME: C O LANGSTON (LAST NAME FIRST)
ORG/FIRM: .....
ADDRESS: P O BOX 667 CITY: BUSHNELL
STATE: FL ZIP CODE: 33513 - .... PHONE: (...) ... - ....
CONTACT: ..... PHONE: (...) ... - ....

FACILITY SOURCE ID: 40TPA60000401

SOURCE INFORMATION RECORD

***** CONSTRUCTION PERMIT/PPS INFORMATION *****
PERMIT #: .... - ..... PPS #: .... FEE PAID: ..... (PERMIT ONLY)
DATE ISSUED: .. / .. / .. DATE EXPIRES: .. / .. / ..
APP COMPLETE: .. / .. / ..

***** OPERATION PERMIT INFORMATION *****
PERMIT #: A060 - -19856 FEE PAID: ..... AOR REQUIRED: . (Y OR N)
DATE ISSUED: 07 / 30 / 79 DATE EXPIRES: 07 / 18 / 84

***** SOURCE DESCRIPTION/TRACKING INFORMATION *****
DESCRIPTION: BOILER #1 USING #5 FUEL OIL
STATUS: A = ACTIVE # OF SCC: 001 # OF POLLUTANT: 004 MAJOR SRC: . (Y OR N)
INITIAL CONSTRUCTION DATE: .. / .. / .. TYPE: .. = ...
SIC: 3273 = READY-MIX CONCRETE
NSPS: ... NESHAP: ... 111D: ... PSD: ... NAA/NSR: ... RACT: ...
COMMENT: 250 HP, 1.55% SULFUR
.....
START UP DATE: .. / .. / .. SHUT DOWN DATE: .. / .. / ..

SOURCE SCHEDULE/RATE RECORD

***** OPERATING SCHEDULE INFORMATION *****
TYPICAL OPERATING SCHEDULE: 24 (HR/DAY) 7 (DAY/WK) 24 (WK/YR)
TYPICAL % OPERATING BY SEASON: 25 (DJF) 25 (MAM) 25 (JJA) 25 (SON)
PERMITTED OPERATING SCHEDULE: .. (HR/DAY) . (DAY/WK) .. (WK/YR) .... (HR/YR)
AOR YR: 86 OPERATING SCHEDULE: 24 (HR/DAY) 7 (DAY/WK) 52 (WK/YR) 8736 (HR/YR)

***** OPERATING RATE INFORMATION *****
MAX PROCESS RATE: ..... UNITS: OTHER
MAX PRODUCTION RATE: ..... UNITS: OTHER

SOURCE EMISSION POINT RECORD

***** EMISSION POINT INFORMATION *****
EMISSION POINT TYPE: . = ...
STACK HEIGHT: 030 (FT) EXIT DIA: 02 . 0 (FT) EXIT TEMP: 0400 (F)
ACTUAL VOLUME FLOW RATE: 0003000 (ACFM) DRY STANDARD FLOW RATE: ..... (DSCFM)
EXIT VEL: 0015 (FT/SEC) NONSTK EMIS HT: 0000 (FT) BLDG HT: .... WD: .... (FT)
POINT UTM: EAST: ... . .. (KM) NORTH: .... (KM) GEP STK HT: ... (FT)
COMMENT: .....

***** CONTROL EQUIPMENT INFORMATION *****
CONTROL A: .....
CONTROL B: .....
CAPITAL COST: A $ ..... B $ ..... TOTAL OPER COST $ ..... AOR YR: 86

FDOC Boiler # 3 – PSD Could not find stack params

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610-9544

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Fossil Fuel Steam Generator [X] New[1] [ ] Existing[1]

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

COMPANY NAME: D.C., Sumter Correctional Institution COUNTY: Sumter

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) No. 3 Boiler

SOURCE LOCATION: Street SR 476-B City Bushnell, FL 323513

UTM: East 382.2 Approx. North 3166.1 Approx.

Latitude 28 ° 37 ' 10 "N Longitude 82 ° 12 ' 27 "W

APPLICANT NAME AND TITLE: Bill Thurber, Assistant Secretary, OMB

APPLICANT ADDRESS: Florida Dept. of Corrections; 1311 Winewood Blvd.; Tallahassee, FL 32399-2500

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of the FL Dept. of Corrections

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

*Attach letter of authorization

Signed: Bill Thurber

Bill Thurber, Assistant Secretary, OMB
Name and Title (Please Type)

Date: 04/06/87 Telephone No. SC: 278-3800 904/488-3800

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

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

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

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

Signed Siddhartha P. Kamath

Siddhartha P. Kamath
Name (Please Type)

Florida Dept. of Corrections
Company Name (Please Type)

1311 Winewood Blvd.; Tallahassee, FL 32399-2500
Mailing Address (Please Type)

Siddhartha P. Kamath
4/3/87

Florida Registration No. 31122 Date: 04/06/87 Telephone No. SC: 277-1330
904/487-1330

SECTION II: GENERAL PROJECT INFORMATION

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

No. 3 Steam Boiler, Nominal 250 HP

Continental Boiler; Model: F122A-250C

Constructed in 1974 SN: 7410-6G23A

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

Start of Construction N/A Completion of Construction N/A

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

Not Applicable

Boiler to be run on No. 5 oil with maximum two (2) percent sulfur

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

None previously issued

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

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

2. Product Weight (lbs/hr): _____

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

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
SO_2	N/A		20% Opacity	N/A	23.67	43.05	
Particulate	N/A		40% Opacity	N/A	0.75	1.37	
CO	N/A		for 2 Min.	N/A	0.38	0.69	
NOX	N/A		in one hr.	N/A	9.05	16.45	
VOC	N/A			N/A	0.02	0.04	

See Section V, Item 2.

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

Calculated from operating rate and applicable standard.

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

12-27-91 KBN

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/~~CONSTRUCT~~ AIR POLLUTION SOURCES

SOURCE TYPE: Limerock Dryer [ ] New[1] [XX] Existing[1]

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

COMPANY NAME: E.R. Jahna Industries, Inc. COUNTY: Hernando

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

SOURCE LOCATION: Street 0.7 mi E. of US 301 on SR 50, then N. 1.5 mi. City Hernando County

UTM: East 386.7 km North 3155.8 km

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

APPLICANT NAME AND TITLE: Marc von Hahmann, General Manager

APPLICANT ADDRESS: E.R. Jahna Industries, Mills Mine, P.O.Drawer 840, Lake Wales, Florida 33859-0840

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of E.R. Jahna Industries

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

*Attach letter of authorization

Signed: E. R. Jahna

E. R. Jahna, III, Vice President
Name and Title (Please Type)

MILLS MINE # 904/583-3080

Date: 10/13/87 Telephone No. 813/676-9431

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

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

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

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

Signed _____

Robert A. Baker, P.E.

Name (Please Type)

KOOGLER & ASSOCIATES, Environmental Services

Company Name (Please Type)

2603 NE 17th Terrace, Gainesville, Florida 32609

Mailing Address (Please Type)

Florida Registration No. 21118 Date: 7/17/87 Telephone No. 904-377-5822

SECTION II: GENERAL PROJECT INFORMATION

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

Rotary drum aggregate dryer is used to dry washed limestone screenings (1/8 inch) which is used as fertilizer filler. Dryer is fired with No. 2 fuel oil at a rate of 300 gal/hr. Particulate matter emissions are controlled with a Simplicity scrubber to 0.04 gr/dscf.

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

Start of Construction January 15, 1981 Completion of Construction February 15, 1981

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

$125,000 H & B Cyclone Collector

$110,000 Simplicity Scrubber with venturi section

Costs include fans, pumps, foundations and structure.

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

AC27-53944

AO27-57847 - Expired 7/23/87

E. Requested permitted equipment operating time: hrs/day 8 ; days/wk 5 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:_____

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

1. Is this source in a non-attainment area for a particular pollutant? NO

   a. If yes, has "offset" been applied? --

   b. If yes, has "Lowest Achievable Emission Rate" been applied? --

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

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

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

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

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

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? NO

   a. If yes, for what pollutants?_____

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

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limestone Screenings	dust	1.0%	300,000 dry	1

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

1. Total Process Input Rate (lbs/hr): 326,000 lb/hr @ 8% moisture (Design Capacity)

2. Product Weight (lbs/hr): 300,000 lb/hr dry

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary) NOTE: The dryer's maximum production rate is 100 TPH, as per recent stack test; normal production rate is approximately 70 TPH.

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Part. Matter	1.2*	1.2*	BACT	13.5**	270.0	281	2
SO2	6.5 50%	6.8	BACT	6.5	13.0	13.5	2
NOx	6.0	6.2	BACT	6.0	6.0	6.2	2

*NOTE: See attached stack test report (8/3/87) for current particulate emissions data.

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard.

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

** Applicant agrees to a 0.04 gr/dscf emission limitation for particulates.

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
H & B	Part. Matter	50%	99+% 20 um	Estimate
Simplicity Scrubber	Part. Matter	90%	99% 5 um	Estimate

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No 2 oil	269	300	41.9

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

Fuel Analysis:

Percent Sulfur: 0.3 Percent Ash: 0.1

Density: 7.2 lbs/gal Typical Percent Nitrogen: Nil

Heat Capacity: 19,400 BTU/lb 139,680 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

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

Annual Average N/A Maximum

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

Solids from scrubber are settled in on-site 3.5 acre pond with depth of 50 feet. Water from this pond is recirculated through the scrubber.

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

Stack Height: 35 ft. Stack Diameter: 6.0 ft.

Gas Flow Rate: 50,000* (Design) ACFM 39,400 DSCFM Gas Exit Temperature: 130 °F.

Water Vapor Content: 12 % Velocity: 29.5 FPS

See attached stack test report for current flow data.

SECTION IV: INCINERATOR INFORMATION

(NOT APPLICABLE)

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

[ ] Other (specify) _____

12-27-91 KBN

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form #
Form Title
Effective Date
DER Application No. (Assigned by DER)

A027-182271

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

JUN 14 1990
SOUTHWEST DISTRICT
TAMPA

SOURCE TYPE: Asphalt Batch Plant [ ] New[1] [x] Existing[1]

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

COMPANY NAME: Oman Construction Compnay COUNTY: Hernando

Identify the specific emission point source(s) addressed in this application (i.e. Lime
Astec Model PFM-327 Flo-Mix Drum Mix Asphalt Plant with a Venturi Wet Scrubber System.

SOURCE LOCATION: Street Camp Mine Road CR 485 (1.8 miles north of Yontz Road) City Brooksville

UTM: East 17-359.8 North 3164.9

Latitude 28 ° 36 ' 23 "N Longitude 82 ° 26 ' 01 "W

APPLICANT NAME AND TITLE: Mr. Joseph Kanaday, Sr., Vice President

APPLICANT ADDRESS: P.O. Box 3038, Spring Hill, FL 34606

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Oman Construction Co.

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

*Attach letter of authorization (See back)

Signed: Joseph Kanaday

Mr. Joseph Kanaday, Sr., Vice President
Name and Title (Please Type)

Date: 6.11.90 Telephone No. (904) 596-2130

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

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

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

Northwest District 160 Governmental Center Pensacola, Florida 32501-5794 904-436-8300
Northeast District 3426 Bills Rd. Jacksonville, Florida 32207 904-798-4200
Central District 3319 Maguire Blvd. Suite 232 Orlando, Florida 32803-3767 407-894-7555
Southwest District 4520 Oak Fair Blvd. Tampa, Florida 33610-7347 813-623-5561
South District 2269 Bay St. Fort Myers, Florida 33901-2896
Southeast District 3301 S. Congress Ave., Suite West Palm Beach, Florida

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

Signed _____

Mr. Thomas E. Brumagin, P.E.
Name (Please Type)

Central Florida Testing Laboratories, Inc.
Company Name (Please Type)

1400 Starkey Road, Largo, FL 34641
Mailing Address (Please Type)

Florida Registration No. 31063 Date: 5/30/90 Telephone No. (813) 581-7019

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary. This project consists of operating an 80 tph Astec Model PFM-327 drum mix asphalt plant on a 6 acre tract of land located on the eastside of Camp Mine Road on Florida Crushed Stone's property northwest of Brooksville, Florida. This plant was originally constructed by Deltona Corporation in Collier County in 1975. The plant operated in Collier County through August of 1976 when it was moved to a site in Volusia County. In May 1977, the plant was moved by Deltona Corp. to its present site on Camp Mine Road in Hernando County. In May 1983, this plant was sold to W.L. Cobb Constructing Company who was subsequently bought out by the present plant owners, Oman Construction in November 1984. Oman operated the plant until February 1988 under permit number A027-96210 when the plant was shut down due to lack of business. This application is to renew the previous operation permit for the plant which expired on January 1, 1990. This facility will operate in compliance with all FDER rules and regulations.

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

Start of Construction N/A - Existing Completion of Construction _____

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

High Pressure Venturi Wet Scrubber	$35,000.00
Effluent Settling Ponds	$1,500.00

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

A027-96210 issued 02-25-85 expired 01-01-90 A027-65852 issued 05-11-83 expired 12-05-84

A027-22374 issued 12-12-79 expired 12-05-84 A027-2904 issued 05-23-77 expired 05-23-79

A064-2415 issued 09-08-76 expired 09-01-81 A011-2171 issued 06-22-76 expired 06-22-81

A011-2171 issued 01-13-75 expired 04-13-76

E. Requested permitted equipment operating time: hrs/day 10 ; days/wk 5 ; wks/yr 52 ;

if power plant, hrs/yr 2600; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? No

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

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

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

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

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

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

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants? _____

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

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limerock and Limerock Screenings	-200 mesh	3.0	119,040	A
Sand	-200 mesh	0.5	29,760	A
Liquid Asphalt Cement	None	0	11,200	H

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

1. Total Process Input Rate (lbs/hr): 160,000 lb/hr

2. Product Weight (lbs/hr): 80 tons per hour as asphaltic concrete

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

Emission Rates are totals for facility.

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	7.68	10.11	Bact	0.04 grains/dscf	392.08	509.83	P
Sulfur Oxides	33.18	47.46	Visible Emissions	20% Opacity	33.18	47.46	P
Carbon Monoxide	2.79	3.94			2.79	3.94	P
Hydrocarbons	0.14	0.20			0.14	0.20	P
Nitrogen Oxides	10.99	15.52			11.99	15.52	P

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Astec Model VD-40	Particulate	99%	+1 Micron	Previous Stack
Venturi Wet Scrubber System				Tests

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Virgin No. 2 fuel oil (diesel)			
Asphalt Plant Burner	400 gal/hr	510 gal/hr	70 MBtu
Plant Generators & Hot Oil Heaters	29 gal/hr	42 gal/hr	5.75 MBtu/hr

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

Fuel Analysis:

Percent Sulfur: 0.50 max Percent Ash: Negligible

Density: 7.15 lbs/gal Typical Percent Nitrogen: Negligible

Heat Capacity: 19,161 BTU/lb 137,000 BTU/gal

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

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

Annual Average _____ Maximum _____

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

No liquid or solid wastes are generated in this process. Scrubber water is sent to settling ponds where the fines settle out. The water is then reused and pumped back to the scrubber. Fines cleaned out of the settling ponds are used as fill material or re-used in the asphalt mix.

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

Stack Height: 25 ft. Stack Diameter: 6 ft.

Gas Flow Rate: 35,000 ACFM 22,176 DSCFM Gas Exit Temperature: 165 °F.

Water Vapor Content: 25 % Velocity: 13.1 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

[ ] Other (specify) _____

5-14-81 JB
A051-43168

Permit was renewed 86 not beyond with No mods.
90 S changed

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
TAMPA

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Turbulent Mass Asphalt Plant [x] New[1] [ ] Existing[1]

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

COMPANY NAME: Overstreet Paving Company COUNTY: Pasco

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) 200 ton/hr Cedar Rapids Asphalt Plant w/Griffith Environmental Baghouse

SOURCE LOCATION: Street U.S. 41 South City Masaryktown

UTM: East 17-355.9 North 3143.7

Latitude 28 ° 24 ' 48 "N Longitude 82 ° 28 ' 15 "W

APPLICANT NAME AND TITLE: Mr. Thomas E. Overstreet, President

APPLICANT ADDRESS: 1390 Donegan Road Largo, FL 33540

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Overstreet Paving Company

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

*Attach letter of authorization

Signed: Thomas E. Overstreet

Mr. Thomas E. Overstreet, President
Name and Title (Please Type)

Date: 5-9-81 Telephone No. (813) 585-4786

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: George C. Sinn, Jr.

Mr. George C. Sinn, Jr. P.E.
Name (Please Type)

(Affix Seal)

Central Florida Testing Laboratories, Inc.
Company Name (Please Type)

1400 Starkey Road Largo, FL 33540
Mailing Address (Please Type)

Florida Registration No. 16911 Date: 5-9-81 Telephone No. (813) 581-7019

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

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

This project consists of a 200 ton/hr Cedar Rapids Turbulent Mass Asphalt Plant located on a 25 acre tract of land in Northern Pasco County. See Process Description. This facility complies with all D.E.R. Rules & Regulations.

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

Start of Construction _____ Completion of Construction _____

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

Griffith Environmental, Inc.	
Model JA - 1040 D Baghouse	$ 135,000
Paving Drive Areas & Soil Cementing Stockpile Area	60,000
Retention Faciliites Fuel & Asphalt Spillage	10,000

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

AC 51-30598 Issued 10-08-80 Expires 04-01-81
Letter of Extention to 06-01-81

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 10 ; days/wk 5 ; wks/yr 52 ; if power plant, hrs/yr _____ ; if seasonal, describe: Not seasonal, but weather dependent
Normal Operating Hours: 7:00 a.m. to 5:00 p.m.

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

See Construction Permit No. AC 51-30598 Application

1. Is this source in a non-attainment area for a particular pollutant? — No
   a. If yes, has "offset" been applied? —
   b. If yes, has "Lowest Achievable Emission Rate" been applied? —
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. — Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. — Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? — Yes
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? — No

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limerock & Screenings	Dust	5	297,600	A
Sand	Dust	1	74,400	A
Liquid Asphalt	None	0	28,000	H

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

1. Total Process Input Rate (lbs/hr): 400,000 lb/hr

2. Product Weight (lbs/hr): 400,000 lb/hr as Hot Asphaltic Concrete Mix

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission ~~lbs/hr~~ (grains/dscf)	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	5.36	7.0	New Source Standard	0.04	980	1274	M
Sulfur Dioxide	58.2	75.7			58.2	75.7	M
Carbon Monoxide	1.6	2.1			1.6	2.1	M
Hydrocarbons	1.2	1.6			1.2	1.6	M
Nitrogen Oxide	32.0	41.6			32.0	41.6	M
Aldehydes	0.8	1.0			0.8	1.0	M

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency (Percent)	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Griffith Baghouse	Particulate	99.9	+1 micron	Design &
Model JA - 1040 D				Test Data
Serial Number				

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard

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

[5]If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 6 Fuel Oil	400 gal	565 gal	160 MBTU/hr
0.9 % Maximum Sulfur			

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: 0.9 Percent Ash: 0.02

Density: 8.088 lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: 19,040 BTU/lb 154,000 BTU/gal

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

F. If applicable, indicate the percent of fuel used for space heating. Annual Average _____ Maximum _____

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

No liquid or solid wastes generated from this process.

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

Stack Height: 30 ft. Rectanglar Stack ~~Diameter~~: 3.25 x 4.41 ft.

Gas Flow Rate: 45,188 ACFM Gas Exit Temperature: 275 °F.

Water Vapor Content: 22.7 % Velocity: 52.5 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

OVERSTREET PAVING COMPANY
CEDARAPIDS DRUM MIX ASPHALT PLANT
ANNUAL PARTICULATE EMISSIONS TEST
CALCULATION OF FUEL CONSUMPTION & SO_2 EMISSIONS

DATE	TIME		Depth to Fuel in Tank (inches)		Amount of Fuel in Tank (gallons)		Total Asphalt Produced (tons)	
	Start	Stop	Start	Stop	Start	Stop	Start	Stop
05-02-90	7:30 am	1:30 pm	31	36½	16,544	13,676	127.88	1221.44

AVERAGE FUEL CONSUMPTION

$$F_{c\ Avg.} = \frac{(16544 - 13676)\ \text{gallons}}{(1221.44 - 127.88)\ \text{tons}} = 2.623\ \text{gal/ton}$$

Run No. 1 F_c = 194.4 ton/hr (2.623 gal/ton) = 509.9 gal/hr

Run No. 2 F_c = 193.7 ton/hr (2.623 gal/ton) = 508.1 gal/hr

Run No. 3 F_c = 191.0 ton/hr (2.623 gal/ton) = 501.0 gal/hr

SULFUR DIOXIDE EMISSIONS

$$E_{SO_2} = \frac{0.0046\ \text{lb-S/lb fuel}\ (7.176\ \text{lb fuel/gal})(64\ \text{gm/gm-mole}\ SO_2)}{(32\ \text{gm/gm-mole}\ O_2)}\ [Q\ \text{Fuel}]$$

$$E_{SO_2} = 6.601\ (10^{-2})\ \text{lb-S/gal}\ [Q\ \text{Fuel}]$$

Run No. 1 E_{SO_2} = 6.601 (10^{-2}) lb-S/gal (509.9 gal/hr) = 33.66 lb/hr

Run No. 2 E_{SO_2} = 6.601 (10^{-2}) lb-S/gal (508.1 gal/hr) = 33.54 lb/hr

Run No. 3 E_{SO_2} = 6.601 (10^{-2}) lb-S/gal (501.0 gal/hr) = 33.08 lb/hr

} × 50% SO_2 Sorption

= 16.71 lb/hr

CFTL — TESTED • APPROVED — CENTRAL FLORIDA TESTING LABORATORIES

Overstreet Paving Company, Inc.
Cedarapids Turbulent Mass Asphalt Plant
Annual Emissions Compliance Test
Calculations of Fuel Consumption & SO_2 Emissions

DATE	RUN No.	Time		Total Fuel Consumed (gal)	Total Asphalt Produced (tons)
		Start	Stop		
05-09-91	1	7:56 am	9:17 am	690.1	272
05-09-91	2	10:31 am	11:48 am	655.4	257
05-09-91	3	12:50 pm	2:05 pm	640.0	264

FUEL CONSUMPTION

Run No. 1

$$F_c = \frac{690.1 \text{ gal. fuel consumed}}{1 \text{ hour } 21 \text{ minutes}} = 511.2 \text{ gal/hr}$$

Run No. 2

$$F_c = \frac{655.4 \text{ gal. fuel consumed}}{1 \text{ hour } 17 \text{ minutes}} = 510.7 \text{ gal/hr}$$

Run No. 3

$$F_c = \frac{640.0 \text{ gal. fuel consumed}}{1 \text{ hour } 15 \text{ minutes}} = 512.0 \text{ gal/hr}$$

MAXIMUM SULFUR DIOXIDE EMISSIONS

$$E_{SO_2} = \frac{0.0037 \text{ LB S/lb fuel } (7.453 \text{ lb-fuel/gal})(64 \text{ gm/gm-mole } SO_2)}{32 \text{ gm/gm-mole } O_2} \text{ [Q Fuel]}$$

$$E_{SO_2} = 5.5152(10^{-2}) \text{lb-S/gal [Q fuel]}$$

Run No. 1 $E_{SO_2} = 5.5152(10^{-2})$lb-S/gal (511.2 gal/hr) = 28.19 lb/hr

Run No. 2 $E_{SO_2} = 5.5152(10^{-2})$lb-S/gal (510.7 gal/hr) = 28.17 lb/hr

Run No. 3 $E_{SO_2} = 5.5152(10^{-2})$lb-S/gal (512.0 gal/hr) = 28.24 lb/hr

} × 50% SO_2 Sorption = 14.1 lb/hr

6-26-79 TB
AC 51-21364

(16)

D.E.R.
JUN 26 1979
SOUTHWEST DISTRICT
TAMPA

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

SOURCE TYPE: Hot Water Boiler #1 (X) New[1] ( ) Existing[1]

APPLICATION TYPE: (X) Construction ( ) Operation ( ) Modification

COMPANY NAME: Community Hospital, New Port Richey COUNTY: Pasco

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

SOURCE LOCATION: Street 205 High Street City New Port Richey

UTM: East +4 North Quebec

Latitude 28 ° 14 ' 14 "N Longitude 82 ° 43 ' 12 "W

APPLICANT NAME AND TITLE Andrew Oravec, Jr., Administrator

APPLICANT ADDRESS Community Hospital, 205 High Street, New Port Richey, Florida 33552

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Hospital Corporation of America

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

Signed: Howard C. Stauffer

Howard C. Stauffer, Asst. V.P., Envir. Serv.
Name and Title (Please Type)

*Attach letter of authorization Date: 6/15/79 Telephone No. 615-868-4515

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: TC Seckman

Thomas C. Seckman
Name (Please Type)

(Affix Seal)

Smith Seckman Reid, Inc.
Company Name (Please Type)

2135 Blakemore Avenue
Nashville, Tennessee 37212
Mailing Address (Please Type)

Florida Registration No. 14140 Date: 6/15/79 Telephone No. 615-383-1113

[1] See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

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

Addition of approximately 100 beds and Office Area to existing Hospital

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

Start of Construction April, 1979 Completion of Construction February, 1980

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

About $10,000 each plus installation cost

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

None for this construction project

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ___Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____; if seasonal, describe:

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

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? _____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____
   c. If yes, list non-attainment pollutants. _____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI & VII. No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

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

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

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

Description	Contaminants Type	% Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
NONE				NONE

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

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

2. Product Weight (lbs/hr): N/A

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1] Maximum lbs/hr	Emission[1] Actual T/yr	Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential[4] Emission lbs/hr	Potential[4] Emission T/yr	Relate to Flow Diagram
SO_2	~~.28~~ .46 max	~~.497~~ 2.0 max	N/A	N/A	N/A	N/A	N/A
Note (1)							

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns)[5]	Basis for Efficiency (Sec.V,It5)
Bryan Flexible Tube Hot Water Boiler - Model	SO_2	80% based on	N/A	Manufacturers
CL-150W-WT-FDGO		manufacturers		Data
Note (2)		data		
For #1 Boiler (2nd Form for #2 Boiler)				

[1]See Section V, Item 2.
[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E.(1), F.A.C. -- 0.1 pounds per million BTU heat input)
[3]Calculated from operating rate and applicable standard
[4]Emission, if source operated without control (See Section V, Item 3)
[5]If Applicable

Notes:

(1) Based on #2 fuel oil @ .3%/lb @ 7.18 lbs/gal @ 140,000 BTU/gal.

(2) Only one boiler at a time will be in service. There is a 100% standby.

$.24 \times 7 \times 52 \times .46 \; 2^{1}/_{4}$ max $\quad .006 \times 7.18 \times 10.7 = .46$ lb/hr max

E. Fuels

Type (Be Specific)	Consumption* avg/hr	max./hr	Maximum Heat Input (MMBTU/hr)
#2 Fuel Oil	4.5 gph	10.7 gal/hr	1.5

*Units Natural Gas,MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: .3%/lb Percent Ash: _____

Density: 7.21 lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: 19,500 BTU/lb 140,000 BTU/gal

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

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

Annual Average 35% Maximum 45%

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

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

Stack Height: 36 ft. Stack Diameter: 1.0 ft.

Gas Flow Rate: 600 (#2 Oil) ACFM Gas Exit Temperature: 520 ^{o}F at 80^{o}F ambient

Water Vapor Content: 8 % Velocity: 14 FPS

45 HP

DER
6-26-79 JB
AC51-21343

(16)

D.E.R.
JUN 26 1979
SOUTHWEST DISTRICT
TAMPA

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

SOURCE TYPE: Hot Water Boiler #2 (X) New[1] ( ) Existing[1]

APPLICATION TYPE: (X Construction ( ) Operation ( ) Modification

COMPANY NAME Community Hospital, New Port Richey COUNTY: Pasco

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

SOURCE LOCATION: Street 205 High Street City New Port Richey

UTM: East +4 North Quebec

Latitude 28 ° 14 ' 14 "N Longitude 82 ° 43 ' 12 "W

APPLICANT NAME AND TITLE Andrew Oravec, Jr., Administrator

APPLICANT ADDRESS Community Hospital, 205 High Street, New Port Richey, Florida 33552

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Hospital Corporation of America

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

Signed: Howard C. Stauffer

Howard C. Stauffer, Asst. V.P., Envir. Serv.
Name and Title (Please Type)

*Attach letter of authorization Date: 6/15/79 Telephone No. 615-868-4515

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: TCSeckman

Thomas C. Seckman
Name (Please Type)

(Affix Seal)

Smith Seckman Reid, Inc.
Company Name (Please Type)

2135 Blakemore Avenue
Nashville, Tennessee 37212
Mailing Address (Please Type)

Florida Registration No. 14140 Date: 6/15/79 Telephone No. 615-383-1113

[1] See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

HCA
Park Plaza
Nash 37203

DER Form 17-1.122(16)

SECTION II: GENERAL PROJECT INFORMATION

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

Addition of approximately 100 beds and office area to existing hospital.

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

Start of Construction April, 1979 Completion of Construction February, 1980

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

About $10,000 each plus installation cost

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

None for this construction project

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ___Yes XX No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____; if seasonal, describe:

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

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? _____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____
   c. If yes, list non-attainment pollutants. _____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI & VII. No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

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

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

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

Description	Contaminants Type	% Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
NONE				NONE

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

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

2. Product Weight (lbs/hr): N/A

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1] Maximum lbs/hr	Actual T/yr	Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential[4] Emission lbs/hr	T/yr	Relate to Flow Diagram
SO_2	.23	.497	N/A	N/A	N/A	N/A	N/A
Note (1)							

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec.V,It5)
Bryan Flexible Tube Hot Water Boiler - Model	SO_2	80% based on	N/A	Manufacturers'
CL-150W-WT-FDGO		Manufacturers'		Data
Note (2)		data		
For #2 Boiler (1st Form for #1 Boiler)				

[1]See Section V, Item 2.
[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E.(1), F.A.C. -- 0.1 pounds per million BTU heat input)
[3]Calculated from operating rate and applicable standard
[4]Emission, if source operated without control (See Section V, Item 3)
[5]If Applicable

Notes :

(1) Based on #2 fuel oil @ .5%/lb @ 7.18 lbs/gal @ 140,000 BTU/gal.

(2) Only one boiler at a time will be in service. There is a 100% standby.

E. Fuels

Type (Be Specific)	Consumption* avg/hr	max./hr	Maximum Heat Input (MMBTU/hr)
#2 Fuel Oil	4.5 gph	10.7 gal/hr	1.5

*Units Natural Gas,MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: .3%/lb Percent Ash: _____

Density: 7.21 lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: 19,500 BTU/lb 140,000 BTU/gal

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

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

Annual Average 35% Maximum 45%

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

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

Stack Height: 36 ft. Stack Diameter: 1.0 ft.

Gas Flow Rate: 600 (#2 Oil) ACFM Gas Exit Temperature: 520 ^{o}F at 80^{o}F ambient

Water Vapor Content: 8 % Velocity: 14 FPS

12-27-91 KCN

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form #
From Title
Effective Date
DER Application No.

JUL 15 1991

A051-200111

Southwest District Tampa

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Drum Mix Asphalt Plant [ ] New[1] [x] Existing[1]

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

COMPANY NAME: Couch Construction Company **COUNTY:** Pasco

Identify the specific emission point source(s) addressed in this application (i.e. Lime

300 ton/hr Standard Havens Drum Mix Asphalt Plant Controlled by a baghouse control system

SOURCE LOCATION: Street 1400 County Road City Odessa

UTM: East 17-340.7 North 3119.5

Latitude 28 ° 11 ' 35 "N Longitude 82 ° 37 ' 16 "W

APPLICANT NAME AND TITLE: Mr. R.L. Sollie, Vice President

APPLICANT ADDRESS: P.O. Box 16546, Tampa, FL 33617

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Couch Construction Company

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

*Attach letter of authorization

Signed: R L Sollie

Mr. R.L. Sollie, Vice President
Name and Title (Please Type)

Date: 7-15-91 Telephone No. (813) 985-9002

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

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

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

Oil Heater:

E. Requested permitted equipment operating time: hrs/day 10 ; days/wk 5½ ; wks/yr 52 ; if power plant, hrs/yr 2860 ; if seasonal, describe: plant not seasonal, but it is weather dependent. Normal daily operating hours: 7:00 am until 1:00 pm

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

1. Is this source in a non-attainment area for a particular pollutant? No

   a. If yes, has "offset" been applied?

   b. If yes, has "Lowest Achievable Emission Rate" been applied?

   c. If yes, list non-attainment pollutants.

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

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

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Yes

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

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants?

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

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limerock and Limerock Screenings	-200 mesh	3.0	315,569	A
Sand	-200 mesh	0.5	118,329	A
Reclaimed Asphaltic Concrete	-200 mesh	2.0	139,514	R, B
Liquid Asphalt	None	0.0	26,588	H

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

1. Total Process Input Rate (lbs/hr): 600,000 lbs/hr

2. Product Weight (lbs/hr): 600,000 lbs/hr or 300 tph as Hot Mix Asphaltic Concrete

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

Note: Potential Emissions (T/yr) - based on hours of operation for plant and oil heater

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	7.3	6.31	NSPS	0.04 grains/dscf	1470.0	1261.3	M
Sulfur Oxides	114.73	98.3		20% opacity	114.73	98.3	M
Carbon Monoxides	4.31	3.68			4.31	3.68	M
Hydrocarbons	0.893	0.77			0.893	0.77	M
Nitrogen Oxides	57.28	49.06			57.28	49.06	M

[1] See Section V, Item 2.

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

[3] Calculated from operating rate and applicable standard.

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

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

Stack Height: 30.0 ft. Stack Diameter: 5' x 3.33 60 x 40 in. ft.

Gas Flow Rate: 73,000 ACFM 34,370 DSCFM Gas Exit Temperature: 325 °F.

Water Vapor Content: 30.0 % Velocity: 73.0 FPS

Cloth Area: 17,280 sq. ft. Bag Type: 14 oz. Nomex Air to Cloth Ratio: 4.3 to 1

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

[ ] Other (specify) _____

Florida Department of Environmental Regulation
Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347
Lawton Chiles, Governor 813-623-5561 Carol M. Browner, Secretary

PERMITTEE:
Couch Construction Company
P.O. Box 16546
Tampa, Florida 33617

PERMIT/CERTIFICATION
Permit No: AO51-196059
County: Pasco
Expiration Date: 08/12/96
Project: Drum Mix Asphalt Plant

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

For operation of a "BCE" 300 ton per hour drum mix asphalt plant (trade name: Turbulent Mass Asphalt Plant) with a "BCE 400" baghouse. The dryer is fired with natural gas only. The maximum heat input rate is 100.0 million Btu per hour. Particulate matter emissions are controlled by a 66,000 ACFM "BCE 400" baghouse. The raw material utilized in the plant may be 100% virgin or may include up to 33% recycled asphalt.

Location: U.S. 98, 3.5 miles north of S.R. 54, Zephyrhills, FL.

UTM: 17-390.3 E 3129.4 N NEDS NO: 0066 Point ID: 01

Replaces Permit No.: AC51-185110

permit AO51-196059 issued 8-12-91 12-27-91 CRN
Zephyrhills - Wheelcoogler got his stack params.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form #	
From File	
Effective Date	
DER Application No.	(Filled in by DER)

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Drum Mix Asphalt Plant [x] New[1] [ ] Existing[1] AC51-185110

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

COMPANY NAME: Couch Construction Company COUNTY: ~~Polk~~ Pasco

Identify the specific emission point source(s) addressed in this application (i.e. Lime

BCE 300 tph Drum Mix Asphalt Plant with BCE 400 Baghouse

SOURCE LOCATION: Street ~~S.R. 471 and U.S. 98 North~~ City ~~Providence~~

UTM: East ~~17 396.4~~ 390.3 North ~~3124.8~~ 3129.4

Latitude ~~28 ° 14 ' 46 "N~~ Longitude ~~82 ° 03 ' 20 "W~~

APPLICANT NAME AND TITLE: Mr. R. L. Sollie, Vice President

APPLICANT ADDRESS: P.O. Box 16546, Tampa, FL 33617

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Couch Const. Co.

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

*Attach letter of authorization

Signed: R. L. Sollie

Mr. R. L. Sollie, Vice President
Name and Title (Please Type)

Date: 8/14/90 Telephone No. (813) 985-9002

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

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

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

Northwest District 160 Governmental Center Pensacola, Florida 32501-5794 904-436-8300
Northeast District 3426 Bills Rd. Jacksonville, Florida 32207 904-798-4200
Central District 3319 Maguire Blvd. Suite 232 Orlando, Florida 32803-3767 407-894-7555
Southwest District 4520 Oak Fair Blvd. Tampa, Florida 33610-7347 813-623-5561
South District 2269 Bay St. Fort Myers, Florida 33901-2896 813-332-2647
Southeast District 1900 S. Congress Ave., Suite A West Palm Beach, Florida 33406 407-964-9444

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

Signed _____

Thomas E. Brumagin, P.E.
Name (Please Type)

Central Florida Testing Laboratories, Inc.
Company Name (Please Type)

1400 Starkey Road, Largo, FL 34641
Mailing Address (Please Type)

Florida Registration No. 31063 Date: 8/14/90 Telephone No. (813) 581-7019

SECTION II: GENERAL PROJECT INFORMATION

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

This project consists of constructing a BCE 300 tph drum mix asphalt plant at the intersection of S.R. 471 and U.S. Highway 98 in Polk County. This plant was formerly permitted and operated by Hardaway Company at Miami International Airport under FDER Permit No. AC13-155353. This facility will comply with all FDER rules and regulations.

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

Start of Construction November 1990 Completion of Construction March 1991

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

BCE 400 baghouse $282,000.00

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

AC13-155353 issued 12-02-88 expired 11-30-89

E. Requested permitted equipment operating time: hrs/day 10 ; days/wk 6 ; wks/yr 52 ;

if power plant, hrs/yr 3120 ; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? No

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

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

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

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

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Yes

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

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants? _____

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

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limerock and Limerock Screenings	-200 mesh	3.0	287,040	A
Sand	-200 mesh	0.5	71,760	A
Recycled Asphalt	-200 mesh	2.0	193,200	RB
Liquid Asphalt	None	0	48,000	II

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

1. Total Process Input Rate (lbs/hr): 600,000 lbs/hr

2. Product Weight (lbs/hr): 300 tons/hr asphaltic cement

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

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Particulate	10.29	16.2	NSPS	0.04 grain/dscf	1,470	2,293	M
Sulfur Oxide	56.21	92.0			56.21	92.0	M
Carbon Monoxide	3.99	6.5			3.99	6.5	M
Hydrocarbons	0.20	0.3			0.20	0.3	M
Nitrogen Oxide	15.80	25.9			15.80	25.9	M

[1] See Section V, Item 2.

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

[3] Calculated from operating rate and applicable standard.

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

erators)

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
BCE 400 baghouse	Particulate	99.5	+1 micron	Design and Test Data

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 2 Fuel Oil	600	750	105.6

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

Fuel Analysis:

Percent Sulfur: ≤ 0.50 Percent Ash: Negligible

Density: 7.13 lbs/gal Typical Percent Nitrogen: Negligible

Heat Capacity: 19,635 BTU/lb 140,000 BTU/gal

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

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

Annual Average None Maximum None

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

No liquid or solid wastes are generated in this process. Dust captured in the baghouse is removed by screw conveyor and returned to the asphalt mix in the mixing drum.

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

Stack Height: 20 ft. Rectangular Stack: 4' x 4' 48" x 48"

Gas Flow Rate: 66,000 ACFM 29,817 DSCFM Gas Exit Temperature: 300 °F.

Water Vapor Content: 35 % Velocity: 68.8 FPS

Air to Cloth Ratio: 5.7 : 1 Square ft of Cloth: 11,580 ft^3 Filter Material: nomex

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

[ ] Other (specify) _____

Couch Construction Company - Pasco
~~Standard Havens Drum Mix Asphalt Plant~~
Annual Particulate Emissions Compliance Test
Calculation of Sulfur Dioxide Emissions

DATE	RUN NO.	TIME START	TIME STOP	TOTAL TONS PRODUCED	TOTAL GALLONS FUEL CONSUMED	FUEL CONSUMPTION (gal/ton)
10/17 1990	1	7:30 am	8:45 am	0.0 363.0	0.0 862.1	2.37
10/22	2	6:15 am	7:45 am	0.0 420.0	0.0 987.4	2.35
10/22	3	8:25 am	9:30 am	428.0 756.0	1006.8 1796.0	2.41

SULFUR DIOXIDE EMISSIONS

$$E_{SO_2} = \frac{0.0025 \text{ LB S/lb-fuel } (7.141 \text{ lb-fuel/gal})(64 \text{gm/gm-mole } SO_2)}{(32 \text{ gm/gm-mole } O_2)}$$

$$E_{SO_2} = 3.5705(10^{-2}) \text{ lb-S/gal}$$

Run No. 1 $E_{SO_2} = 3.5705(10^{-2})$lb-S/gal(2.37 gla/ton)(290.4 ton/hr) = 24.57 lb/hr

Run No. 2 $E_{SO_2} = 3.5705(10^{-2})$lb-S/gal(2.35 gal/ton)(280.0 ton/hr) = 23.49 lb/hr

Run No. 3 $E_{SO_2} = 3.5705(10^{-2})$lb-S/gal(2.41 gal/ton)(302.8 ton/hr) = 26.06 lb/hr

} × 50% Surplus = 12.41 lb/hr

#2 - plant - Actual SO_2 Emissions = 1.56 g/s

Florida Department of Environmental Regulation
Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400
Lawton Chiles, Governor
Carol M. Browner, Secretary

October 31, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. W. Neiser, Senior Vice-President
Legal and Governmental Affairs
Florida Power Corporation
3201 34th Street South
St. Petersburg, Florida 33733

Dear Mr. Neiser:

Re: PSD-FL-180, AC 49-203114

The Department has received your application for a permit to construct six (6) simple cycle turbines at your facility in Intercession City, Osceola County, Florida. Based on our initial review of your proposal, we have determined that additional information is needed in order to continue to process this application. Please complete the application by supplying the information requested below.

BACT Analysis

Evaluate and compare the economic alternatives ($/tons removed) and the environmental benefits (tons removed/grade oil, tons/yr, lbs/hr) associated with the consumption of No. 2 fuel oil with different grades of sulfur content (0.1%, 0.2%, avg 0.3% and max 0.5%).

The BACT analysis for NO_X should be expanded in order to evaluate the economic impacts of the different alternatives presented. The analysis should include a complete explanation of the procedure used for assessing the economic impacts, any supporting data, and an itemization and explanation of all costs. Please submit a chart showing the above data and the comparison of cost on the basis of dollars per ton of NO_X removed for each one of the alternatives presented. In addition, compare the environmental, economic, and technical feasibility of using water or steam injection with an improved low NO_X burner design.

General

Page 4-14 of the Control Technology review section indicates that "the combustion chamber design includes water injection using the GE quiet combustor for the Frame 7EA machines." Will this design

be used for the two (2) Frame 7FA turbines? If not, explain the design considered.

Page 2-1 of the Project Description. Does this proposed project consist of six (6) simple cycle CT peaking units of one (1) unit each, or two (2) units each? Please explain. Clarify if existing operation comprise six (6) or twelve (12) simple cycle turbines?

What is the efficiency of each turbine (Frame EA and Frame FA)?

Calculate Y for each turbine model under the different scenarios proposed. (Refer to NSPS, Subpart GG).

DER Form 17-1.202(1)

Page 5 of 12. There is a discrepancy between the heat input listed on this page and the heat input listed in Table A-1 and A-16 (100% peak load and 59°C). Which one is correct?

Page 6 of 12. What are the stack arrangements? Submit a flow diagram showing the arrangements.

Appendix A

Calculate the emissions rates for all applicable pollutants from the GE Frame 7FA turbine at different loads (75%, 50%, and 25%).

Show basis of calculation and equivalence in lbs/MMBtu emission rate for each one of the pollutants considered in this project.

Air Quality Analysis

1. Please evaluate the impact of this project on the Class I Chassahowitka National Wilderness Area. This evaluation should include an SO_2 PSD Class I increment analysis and an air quality related values analysis (AQRV). The AQRV analysis includes impacts to visibility, soils, vegetation, and wildlife.

2. Please perform an air toxics analysis for all toxic pollutants proposed to be emitted by burning fuel oil. This analysis should include modeling to determine predicted impacts which can then be compared to the appropriate no threat levels. This analysis should also include impacts due to sulfuric acid mist and arsenic.

Please send the requested information to Teresa Heron at the above address. The processing of your application will continue as soon as this information is received.

Sincerely,

Barry D. Andrews

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

CHF/TH/plm

cc: Ken Koskyl P.E.
Jewell Harper, EPA
Chris Hanes, NPS

P 617 884 184

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PSD-FI-180
AC 49-003114

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Mr. R. W. Nelson, S. V. P.
Legal & Gov't Affairs
Fla. Power Corp.
3201 34th St. South
St. Petersburg, Fl 33733

4a. Article Number: P 617 884 184

4b. Service Type
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Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 9, 1991

Ms. Jewell A. Harper, Chief
Air Enforcement Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Ms. Harper:

RE: Florida Power Corporation
Intercession City, Osceola County
PSD-FL-180

Enclosed for your review and comment is the above referenced PSD permit application. If you have any comments or questions, please contact Teresa Heron or Cleve Holladay at the above address or at (904)488-1344.

Sincerely,

Patricia G. Adams

Patricia G. Adams
Planner
Bureau of Air Regulation

/pa

Enclosure