Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

September 6, 2002

Ms. Shelly Castro
Associate Engineer, Environmental Affairs
Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

Re: Request For Use Of polymerized hydrocarbon-based Binder As A Coal Dust Suppressant
Big Bend Station, Facility ID #: 0570039

Dear Ms. Castro:

We have received your request, dated August 6, for concurrence that the use of a polymerized hydrocarbon-based binder (NALCOAL® 7899 made by ONDEO Nalco Company) on your coal will not result in an adverse environmental impact. We have also received a letter from your Professional Engineer outlining the environmental effects resulting from the use of this product. Before concurrence can be granted, please provide the following information:

1. Is it your intent to use this product in addition to those binders previously approved on February 15 and September 16, 2002, or instead of?
2. Please provide a detailed evaluation of the effects of combustion of this polymerized hydrocarbon-based material, comparing future potential emissions to the past actual emissions from these boilers. Include a description of the type(s) of control device(s), their efficiencies, and the means of disposal of the collected ash.
3. . The Material Safety Data Sheet lists several hazardous air pollutants (HAPs) as constituents of this product. Please address the potential increase in hazardous air pollutant (HAP) emissions, as well as all criteria pollutant emissions, as a result of the combustion of this polymerized hydrocarbon-based material.
4. The Material Safety Data Sheet lists several hazardous/heavy metals as constituents of this product. Please address the potential increase in emissions of heavy metals as a result of the combustion of this polymerized hydrocarbon-based material.
5. The Material Safety Data Sheet lists several halogens as constituents of this product. Please address the potential increase in emissions of individual (particularly Fluoride) and total halogens as a result of the combustion of this polymerized hydrocarbon-based material.
6. Please provide information regarding the "volatile matter" which comprises 53-56% of the as-received material. What is the volatile matter if it is not VOC? Does "as-received" indicate the liquid phase that is received at the coal supplier or the solid phase that is received with your coal?
7. Please provide information on the percentage, by weight, which this material will comprise in the coal, as it is being combusted.
8. What is the Btu value of the dried remainder of this product that is bound to your coal?

The above information is necessary because the use of this material, with all of it's various constituents, could potentially be considered a change in the currently permitted method of operation. If it were determined to be a change in the method of operation, a construction permit would be required prior to using this binder.

Should you have any questions regarding this matter, please contact Jonathan Holtom, P.E., at (850) 921-9531, or write to me at the above letter head address.

Sincerely,

Scott M. Sheplak, P.E.
Administrator
Title V Section

CHF/sms/jh

cc: Mr. Thomas W. Davis, P.E., ECT
Mr. Buck Oven, P.E., DEP-SCO
Mr. Jerry Kissel, P.E., DEP-SWD
Mr. Jerry Campbell, P.E., EPCHC

TAMPA ELECTRIC

RECEIVED
AUG 07 2002
BUREAU OF AIR REGULATION

August 6, 2002

Mr. Scott M. Sheplak, P.E.
Florida Department of Environmental Protection
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Via FedEx
Airbill No. 7919 0025 7389

Re: Tampa Electric Company
Big Bend Station
FDEP File No. 0570039-010-AV
Notification of Use of Coal Treated with Binder

Dear. Mr. Sheplak:

Tampa Electric Company (TEC) has been firing solid fuel that has been treated with a binder that is used as a chemical dust suppressant. Recently, a polymerized hydrocarbon-based binder has become available for use, and TEC intends to begin using this material for dust suppression. The types of solid fuel currently being used will remain the same, and as with the previous binders, this polymerized hydrocarbon-based binder will not affect emissions from the plant. The main environmental benefit for the application of this binder is minimized particulate emissions during solid fuel handling. An additional aspect of the treatment of the solid fuel with the binder product is it allows the producer of the fuel to qualify for a fuel tax credit. TEC intends to begin using the treated solid fuel in varying percentages of the overall fuel mix.

Enclosed is information on the polymerized hydrocarbon-binder agent, which will be used in the treatment process of the fuel that TEC will receive. This binder may be used interchangeably with the other binders in use at Big Bend Station, and TEC requests concurrence from the Department that treating solid fuel with these materials will not result in an adverse environmental impact.

Please feel free to telephone me at (813) 641-5033, if you have any questions.

Sincerely,

Shelly Castro
Associate Engineer
Environmental Affairs

EA/bmr/SSC128

Enclosures

c/enc: Mr. Jerry Kissel, FDEP-SW District
Mr. Hamilton Oven, FDEP
Mr. Jerry Campbell, EPCHC

ONDEO Nalco

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCOAL® 7899

EMERGENCY TELEPHONE NUMBER

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **NALCOAL® 7899**

COMPANY IDENTIFICATION : ONDEO Nalco Company
ONDEO Nalco Center
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING
HEALTH : 1 / 1 FLAMMABILITY : 0 / 0 REACTIVITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Based on our hazard evaluation, none of the substances in this product are hazardous.

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

CAUTION
May cause irritation with prolonged contact.
Do not get in eyes, on skin, on clothing. Do not take internally. Keep container tightly closed. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.
Wear suitable protective clothing.
May evolve oxides of carbon (COx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.

INGESTION :
Not a likely route of exposure. No adverse effects expected.

INHALATION :
Not a likely route of exposure. Aerosols or product mist may irritate the upper respiratory tract.

SYMPTOMS OF EXPOSURE :
Acute :
A review of available data does not identify any symptoms from exposure not previously mentioned.
Chronic :
A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS :
A review of available data does not identify any worsening of existing conditions.

4. FIRST AID MEASURES

EYE CONTACT :
Immediately flush eye with water for at least 15 minutes while holding eyelids open. If symptoms develop, seek medical advice.

SKIN CONTACT :
Flush affected area with water. If symptoms develop, seek medical advice.

INGESTION :
Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. Get medical attention.

INHALATION :
Remove to fresh air, treat symptomatically. Get medical attention.

NOTE TO PHYSICIAN :
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : > 212 °F / > 100 °C ( )

EXTINGUISHING MEDIA :
This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Keep containers cool by spraying with water. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :
May evolve oxides of carbon (COx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Wash site of spillage thoroughly with water. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :
Avoid eye and skin contact. Do not take internally. Do not get in eyes, on skin, on clothing. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labelled. Keep the containers closed when not in use. Use with adequate ventilation.

STORAGE CONDITIONS :
Store the containers tightly closed. Store in suitable labelled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :
Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

ENGINEERING MEASURES :
General ventilation is recommended.

RESPIRATORY PROTECTION :
Respiratory protection is not normally needed. If significant mists, vapors or aerosols are generated an approved respirator is recommended. An organic vapor cartridge with dust/mist prefilter may be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :
Neoprene gloves, Nitrile gloves, Butyl gloves, PVC gloves

SKIN PROTECTION :
Wear standard protective clothing.

EYE PROTECTION :
Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :
If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Keep an eye wash fountain available. Keep a safety shower available.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Light Blue
ODOR	Vinegar

SPECIFIC GRAVITY	1.1
DENSITY	9.16 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	4.5
VAPOR PRESSURE	18.5 mm Hg @ 70 °F / 21 °C
VOC CONTENT	0.00 %

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Freezing temperatures. High temperatures

MATERIALS TO AVOID :
Metals

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potential human hazard is: Low

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

No toxicity studies have been conducted on this product.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are:

LAND TRANSPORT :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
Based on our hazard evaluation, none of the substances in this product are hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302 :
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

- Immediate (Acute) Health Hazard
- Delayed (Chronic) Health Hazard
- Fire Hazard
- Sudden Release of Pressure Hazard
- Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :
This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The chemical substances in this product are on the TSCA 8(b) Inventory (40 CFR 710).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR / formerly Sec. 311 :
None of the substances are specifically listed in the regulation.

CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :
This product contains the following substances listed in the regulation:

Substance(s)	Citations
Diethylene Glycol :	Sec. 111
Glycol Ethers :	Sec. 112

MICHIGAN CRITICAL MATERIALS :
None of the substances are specifically listed in the regulation.

STATE RIGHT TO KNOW LAWS :
The following substances are disclosed for compliance with State Right to Know Laws:

Water	7732-18-5
Glycol	20507700000-5211P

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :
Not considered a WHMIS controlled product.

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, Co.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO

Prepared By : Product Safety Department
Date issued : 08/22/2001
Replaces : 12/15/2000

ONDEO Nalco

Nalcoal 7899 Product Information (Expanded and Refined 3-2002)

Element	"Wet" (As Received) Trace Metals Analysis (p.p.m.)	Post Ignition Trace Metals Analysis (% by wt. in 0.2% ash*)
Aluminum		0.18% of ash
Antimony	0.003	
Arsenic	0. 32	
Barium		0.01% of ash
Beryllium	<0.001	
Cadmium	<0.001	
Calcium		0.30% of ash
Chromium	<0.001	
Cobalt	<0.001	
Copper	6.852	
Iron		0.01% of ash
Lead	1200 lb ? 0.86	
Lithium	0.0121	
Manganese		0.01% of ash
Magnesium		3.08% of ash
Mercury	200 lb ? 0.04	
Molybdenum	<.001	
Nickel	0.118	
Phosphorus		41.25% of ash
Potassium		0.01% of ash
Selenium	0.037	
Silica		2.28% of ash
Silver	0.0089	
Sodium		48.51% of ash
Strontium		0.03% of ash
Sulfur	?	3.19% of ash
Titanium		0.01% of ash
Total Halogens (See Below)	**228**	
Bromide	20	
Chloride	170	
Fluoride	? 3 TPY 22	
Iodide	6	
Vanadium	0.034	
Zinc	0.620	

HAP 141

No HAP unless Reconstituted

*Total Halogens: SW 846 Method 9253

- Chloride: ASTM D 4208
- Flourine: ASTM D 3761
- Bromine: ASTM D-4208 (modified)
- Iodine: by difference

* 7899 as received is 99.99 % organic compounds, 0.01% ash. **Extractable Organic Halides were **NOT DETECTABLE**

Nalcoal 7899 Product Information (cont'd.)

Proximate Analysis (as received):	Ultimate Analysis	
Btu Value: approx. 5817/pound	As Received	Dry Basis
Moisture: 44 to 46%	Carbon: 33.12	Carbon: 59.76%
Ash: 0.11% as received	Hydrogen: 3.58%	Hydrogen: 6.46%
Fixed Carbon: 0.15%	Nitrogen: 0.10%	Nitrogen: 0.18%
VOC: 0% (EPA Method 24)	Oxygen: 18.50%	Oxygen: 33.38%
Volatile Matter: 53 to 56%	Sulfur: 0.01%	Sulfur: 0.02%

Ash Composition (Energy Dispersive X-Ray Analysis)

EDXA analysis of the ash resulting from combustion of Nalcoal 7899 indicates the presence of sodium, sulfur, calcium and potassium.

Viscosity Data

Degrees F	centiPoise
45	960
60	760
75	630
90	600

Toxicity Information

Nalcoal 7899 contains no substances on the SARA Section 313 list of toxic chemicals (40 CFR 372) as indicated in the MSDS. Nalcoal 7899 contains no compounds reportable under TRI.

Nalcoal 7899 is non-toxic and generates no hazardous materials when added to coal. No aromatic organic raw materials or their derivatives such as benzene, toluene, xylene or phenol are used in the manufacture of Nalcoal 7899. At dose levels, synthetic fuels produced using Nalcoal 7899 are odorless and generally indistinguishable from coal.

Although Nalcoal 7899 is combustible when applied to coal, flammable vapors are not produced by the application or combustion of Nalcoal 7899 with coal. The sole combustion products of Nalcoal 7899 are carbon dioxide and/or carbon monoxide. Nalcoal 7899 treatment generally has no adverse impact on sulfur dioxide or nitrogen oxide emissions upon combustion of the resulting fuel product. The treatment of coal with Nalcoal 7899 typically yields a product with a lower sulfur content per ton, due to the replacement of some of the sulfur-containing coal with a very low sulfur content of Nalcoal 7899. The change in sulfur content may not be considered significant by most end users.

Leachability (TCLP) Analysis

Leachability testing (TCLP) has been performed on representative coals treated with Nalcoal 7899. Samples were prepared with Nalcoal 7899 at a 0.2% dose level. With the exception of barium, no toxic leach products were detected during TCLP analysis. The levels of Barium from treated synfuel were consistent with levels found in the untreated coal feedstock.

Nalcoal 7899 Product Information (cont'd.)

General Information

Nalcoal 7899 is manufactured in the U.S. using raw materials produced within the U.S.

IMPORTANT: Nalcoal 7899 contains NO Volatile Organic Carbon (VOC) (EPA method 24)

Nalcoal 7899 attaches itself to the raw fuel via Van der Waals physical forces and, once cured, is essentially irreversible. Curing generates a water-resistant film on the surface of the coal particles. As a result of this bonding action, Nalcoal 7899 cannot be leached out of the coal under ambient conditions. Independent laboratory data further indicates that this film may actually assist in prevention of leaching of pre-existing toxic contaminants from so-treated synfuel.

Nalcoal 7899 permits the joining of fine coal particles into the film. The cured film formed with Nalcoal 7899 exhibits no tackiness and largely eliminates airborne particulate problems associated with flowability, handling, milling and grinding.

Nalcoal 7899 is typically fed neat when available mixing is adequate. The product may also be diluted with water at a 1:1 ratio (or less) when needed. Nalcoal 7899 is easily diluted with an in-line mixer. Water added (typically 4-5 pounds per ton) with concentrated Nalcoal 7899 is minimal, particularly when compared with paper process waste/by-products or asphaltine emulsions.

MSDS Information

NFPA 704/HMIS Ratings:	
Health	0/1 (Insignificant/Slight)
Flammability	1/1 (Slight/Slight)
Reactivity	0/0 (Insignificant/Insignificant)
Percent Solids	55%
Physical State	Liquid
Appearance	Bluish White
Odor	Slight, Vinegar
Density	9.1 lbs.(±0.1 lbs.)/gallon
Solubility in Water	Completely Dispersible
pH (100% Nalcoal 7899)	4.5
Boiling Point	> 221° F
Volatile Organic Carbon (VOC)	0% per EPA Method 24
Freeze Point	24° F No Freeze/Thaw recovery

ECT
Environmental Consulting & Technology, Inc.

July 29, 2002

Ms. Shelly Castro
Tampa Electric Company
6944 U.S. Highway 41 North
Apollo Beach, FL 33572-9200

Re: Tampa Electric Company
Big Bend Station
Use of Coal Treated with Nalcoal® 7899 Binder

Dear Ms. Castro:

Professional engineer certifications were previously provided to Tampa Electric Company regarding the environmental issues associated with the handling and combustion of coal treated with dust suppressant binders. The specific binders evaluated were Latex DL 298NA, COVOL 298, and COVOL 298-1 made by Dow Chemical Company and MTT-180 Chemical Change Reagent manufactured by Midwest Terminals of Toledo, Inc. The Florida Department of Environmental Protection (FDEP) subsequently approved these binders as Title V permit authorized "chemical dust suppressants" for use in reducing fugitive dust emissions during coal handling and storage.

In response to your request, this letter provides a professional engineer certification for an additional binding material planned for use at the Big Bend Station. This binding material is manufactured by ONDEO Nalco Company and is identified as Nalcoal® 7899.

As with the prior binding materials, the ONDEO Nalco Company Nalcoal® 7899 coal binder will serve to reduce fugitive particulate matter emissions during coal handling and storage. The Nalcoal® 7899 binder reduces potential fugitive particulate matter (PM) emissions due to coal handling and storage by joining or binding fine coal particles into the binder coating. This certification addresses the collateral issues of: (a) potential emissions of volatile organic compound (VOC) emissions, (b) binder combustion emissions, and (c) potential surface runoff contamination. Each of these issues are discussed in the following sections:

A. Potential for VOC Emissions

The Material Safety Data Sheet (MSDS) for the Nalcoal® 7899 binder indicates that the material is a light blue liquid with a density of 9.16 lb/gal and a vapor pressure of 18.5 mm Hg at 70°F. The MSDS also indicates that the liquid binder contains no VOCs, i.e., a VOC content of 0.00%.

3701 Northwest
98TH Street
Gainesville, FL
32606

(352)
332-0444

FAX (352)
332-6722

Additional information obtained from ONDEO Nalco (i.e., Nalcoal® 7899 Product Information bulletin) notes that the VOC content of 0.0% is based on EPA Reference Method 24. The Product Information bulletin provides additional data regarding the as-received Nalcoal® 7899 binder including a heat content of 5,817 Btu/lb, moisture content of 44 to 46 weight percent, boiling point greater than 221°F, ash content of 0.11 percent by weight, and sulfur content of 0.01 percent by weight. In liquid phase.

ONDEO Nalco has further advised that the Nalcoal® 7899 binder is a liquid copolymer that consists of: (a) 52.5 weight percent proprietary emulsion of high molecular weight vinyl acetate/ethylene copolymer (organic solids), (b) 5 percent by weight diethylene glycol solution (aqueous solution contains approximately 20 percent by weight diethylene glycol and 80 percent by weight water), and (c) 46.5 weight percent water. Range of binder organic solids is 52 to 55 weight percent and range of water content is 45 to 48 weight percent.

The Product Information bulletin states that the Nalcoal® 7899 binder attaches itself to the raw coal fuel and is essentially irreversible once cured. The Nalcoal® 7899 binder MSDS vapor pressure data (i.e., 18.5 mm Hg at 70°F) indicates that the binder vapor pressure is primarily due to the water content of the material (vapor pressure of water at 70°F is 18.8 mm Hg). Since Tampa Electric Company plans to receive coal that has been previously treated with the Nalcoal® 7899 binder (i.e., following curing of the binder), any VOC emissions during storage and handling of the treated coal at the Big Bend Station will be negligible.

B. Coal Binder Combustion Emissions

The as-received Nalcoal® 7899 binder material is a liquid emulsion comprised of a polymerized hydrocarbon (i.e., high molecular weight vinyl acetate/ethylene copolymer) and water. The high combustion temperatures and residence times occurring in the Big Bend Station coal-fired units would be expected to result in essentially complete combustion of the Nalcoal® 7899 binder to carbon dioxide (CO_2) and water (H_2O). The dosage rate of the Nalcoal® 7899 binder is approximately 4 to 8 pounds of as-received binder per ton of coal. Following curing, each ton of treated coal will contain approximately 2 to 4 pounds of binder copolymer solids. The Nalcoal® 7899 binder therefore represents a very small portion of the treated coal (i.e., 0.1 to 0.2 weight percent on a cured binder basis).

The Nalcoal® 7899 binder contains 0.2 weight percent ash and 0.02 weight percent sulfur on a cured (i.e., dry) basis. These ash and sulfur levels are well below the levels found in the parent (i.e., untreated) coal. The Big Bend Station boilers are equipped with high efficiency electrostatic precipitators and wet flue gas desulfurization (FGD) air pollution control systems for particulate matter (PM) and sulfur dioxide (SO_2) control. Due to the low level of

cured binder in the treated coal (0.1 to 0.2 weight percent), the low levels of ash and sulfur in the cured binder (0.2 and 0.02 weight percent, respectively), and the existing Big Bend Station air pollution control systems, no changes in PM or SO_2 emissions would be expected. Similarly, no changes in emissions rates of pollutants that are primarily affected by combustion process conditions (i.e., NO_x, CO, and VOCs) are expected since boiler operating conditions will not change due to use of the Nalcoal® 7899 binder treated coal.

C. Potential Surface Runoff Contamination

The Product Information bulletin states that the Nalcoal® 7899 binder attaches itself to the raw coal fuel and is essentially irreversible once cured. Accordingly, the Nalcoal® 7899 cured binder solids would be expected to remain with the coal and ultimately be oxidized in the Big Bend Station boilers. Surface runoff from the treated coal handling and storage areas would therefore be expected to have negligible, if any, amounts of the Nalcoal® 7899 binder.

Please contact me at (352) 332-6230, Ext. 351 if there are any questions regarding this certification.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Thomas W. Davis, P.E.
Principal Engineer

Professional Engineer Statement:

I, the undersigned, hereby certify that:

To the best of my knowledge, the emission estimates reported in this certification are true, accurate, and complete based upon reasonable techniques available for estimating emissions.

Signature
Professional Engineer No. 36777

7/29/02
Date