TRANSMITTAL

Date: December 30, 2010

Project No.: 103-89644

To: Jeff Koerner

Company: FDEP – New Source Review Section

From: Veronica Figueroa

Address: 2600 Blair Stone Road
MS 5000
Tallahassee, FL 32399

Email:

RE: MINOR SOURCE AIR CONSTRUCTION PERMIT APPLICATION

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ACKNOWLEDGEMENT REQUIRED:

☐ Yes ☐ No

Golder Associates Inc.
5100 W. Lemon Street, Suite 208
Tampa, FL 33609 USA
Tel: (813) 287-1717 Fax: (813) 287-1716 www.golder.com

REPORT

MINOR SOURCE AIR CONSTRUCTION PERMIT APPLICATION

Request for Temporary Testing and Other Permit Revisions
Crystal River North Power Plant
Facility ID No. 0170004

Submitted To: Air Quality Division
Department of Environmental Protection
2600 Blair Stone Road
MS 5000
Tallahassee, FL 32399

Submitted By: Golder Associates Inc.
5100 W. Lemon Street, Suite 208
Tampa, FL 33609 USA

Distribution: 4 Copies—Florida Department of Environmental Protection
2 Copies—Progress Energy Florida
1 Copy—Golder Associates Inc.

December 2010

103-89644

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December 29, 2010 103-89644

Mr. Jeff Koerner, P.E.
Air Quality Division
Department of Environmental Protection
2600 Blair Stone Road,
MS 5000
Tallahassee, Florida 32399-2400

RE: MINOR SOURCE AIR CONSTRUCTION PERMIT APPLICATION
REQUEST FOR TEMPORARY TESTING AND OTHER PERMIT REVISIONS
CRYSTAL RIVER POWER PLANT
FACILITY ID NO. 0170004

Dear Mr. Koerner:

Florida Power Corporation, doing business as Progress Energy Florida, Inc. (PEF), has prepared this application for a minor source air construction permit for the Crystal River Energy Complex (CREC) to request temporary installation, testing, and operation of new equipment and processes at the CREC Units 4 and 5, as well as allow for revisions to certain existing permit conditions. The requested permit would allow for temporary operation of an alternative sorbent (e.g., hydrated lime) injection system for sulfuric acid mist (SAM) control, application of fuel additives (e.g., magnesium oxide) for enhanced boiler operation, and revisions to certain permit conditions in Air Construction Permit No. 0170004-023-AC. Specifically, PEF requests revisions to Condition 8.e (the stack opacity limit), as well as removal of, or a change in the terms (from percent sulfur to lbs SO_2/MMBTU) of the coal sulfur limit in Condition 6.a.

PEF looks forward to working with you on this permitting effort. If you would like to discuss any issues regarding this application, please contact Jamie Hunter of PEF by telephone at (727) 820-5764 or Scott Osbourn, P.E. of Golder Associates at (813) 287-1717.

Sincerely,

GOLDER ASSOCIATES INC.

Scott Osbourn, PE
Associate and Senior Consultant

Enclosures

Cc: Mara Nasca, DEP SW District
Michael Halpin, DEP Siting Office
Larry Hatcher, PEF
Jamie Hunter, PEF
Kim McDaniel, PEF

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PART I
APPLICATION REPORT

1.0 INTRODUCTION

Florida Power Corporation, doing business as Progress Energy Florida, Inc. (PEF), has prepared this application for a minor source air construction permit for the Crystal River Energy Complex (CREC) to request temporary installation, testing, and operation of new equipment and processes at the CREC Units 4 and 5, as well as allow for revisions to certain existing permit conditions. The requested permit would allow for temporary operation of an alternative sorbent (e.g., hydrated lime) injection system for sulfuric acid mist (SAM) control, application of fuel additives (e.g., magnesium oxide) for enhanced boiler operation, and revisions to certain permit conditions in Air Construction Permit No. 0170004-023-AC. Specifically, PEF requests revisions to Condition 8.e (the stack opacity limit of 15 percent), as well as removal of, or a change in the terms (from percent sulfur to lbs SO_2/MMBTU) of the coal sulfur limit in Condition 6.a.

Regarding the demonstration projects, PEF will temporarily operate the proposed systems and collect performance and emissions data to assess each system's effectiveness. The proposed temporary systems are as follows:

- An injection system using alternative sorbents, such as hydrated lime, for control of SAM emissions; and
- Application of chemical additives, such as magnesium oxide, to the fuel combusted in CREC Units 4 and 5 in order enhance boiler performance (i.e., reduce SO_3/SAM emissions, boiler slagging and increase ash pH levels).

The purpose of these efforts is to evaluate alternative strategies to control SAM emissions to permitted levels in a manner that may also reduce the level of ammonia (NH_3) in the fly ash. As a result of using NH_3 for SO_3 (i.e., sulfuric acid mist or SAM) mitigation, NH_3 and/or NH_3 compounds are collected and retained with the fly ash in amounts that affect handling and storage operations, as well as limit the beneficial reuse of the fly ash.

The demonstration period is expected to last a sufficient amount of time for PEF to evaluate the different potential combinations of controls. This may take up to six months, with another month on each end for mobilization and demobilization. If components of the demonstration project are successful, PEF may choose to convert the successful components to a permanent system that may operate in lieu of, and/or in conjunction with the current NH_3 alkali injection system. Therefore, it is important that the air construction permit allow for continued operation of the temporary system (if successful) until the permanent system can be fully permitted and installed. It may take up to 18 months to design and install the permanent system and it is envisioned that, at that time, an application for concurrent processing of an air construction permit and for Title V revisions would be filed, along with the demonstration project emissions and performance test data.

The air permit application consists of the appropriate application form required by the Florida Department of Environmental Protection (FDEP) Form 62-210.900(1), effective 3/11/2010 (see Part II of this application package). This air application report is divided into the following major sections:

- Section 1.0 provides the Project introduction
- Section 2.0 provides a description of the Project
- Section 3.0 provides a background on requested revisions to existing permit conditions
- Section 4.0 provides a review of the air requirements applicable to the Project
- Section 5.0 provides background on proposed new permit language relative to the demonstration projects.

2.0 PROJECT DESCRIPTION

2.1 Alkali Injection System

PEF proposes to temporarily install, operate, and evaluate a demonstration injection system using alternative sorbents and/or locations to control SAM emissions from Units 4 and 5. Additional detail on this proposed demonstration project (i.e., process flow diagrams, emission calculations, etc.) is presented in Appendix A. This temporary system is proposed to be used in lieu of, as well as in conjunction with, the current NH_3 injection system for control of SAM emissions. The purpose of the demonstration program is to gather operational and emissions data to evaluate overall impacts in support of using alternative sorbents and/or injection locations in the alkali injection system. If the demonstration is successful, PEF may convert the temporary sorbent injection system (use of alternative sorbents and/or locations) to a permanent system that may operate with, or without, the current NH_3 alkali injection system.

For alternative dry sorbent demonstrations, the sorbent will be transported from the sorbent silo to the injection point(s) in the flue gas stream via a pneumatic conveying system. The location of the dry sorbent injection points will be based on an iterative process that evaluates a combination of locations (e.g., SCR inlet, air heater inlet, ESP inlet/outlet) to optimize the system, as shown in Appendix A- Figure 1. The sorbent injection rates will vary during the demonstration period based on emission control levels and operational parameters at each of the sorbent injection locations. The sorbent will react with the acidic compounds in the flue gas stream to form particulate matter that will be removed in the ESP and/or in the wet scrubber. Appendix A- Figure 2 presents an overview of the dry sorbent storage and pneumatic conveying equipment associated with the demonstration injection system.

Current alkali injection technologies include sodium bicarbonate ($NaHCO_3$) injection, calcium hydroxide – hydrated lime [$Ca(OH)_2$] injection, Trona injection, dry magnesium oxide (MgO) injection, sodium bisulfite ($NaHSO_3$ or SBS) injection, calcium carbonate ($CaCO_3$) injection, micronized limestone injection, and ammonia (NH_3) injection. These additives are examples of those that are currently being utilized by the Industry. It is realized that such alkali injection technologies will continue to be developed and implemented. PEF will continue to consider other alkali injection technologies that may be available at any given time, although, it is currently proposed that the initial demonstration be conducted using hydrated lime. Progress Energy prefers using hydrated lime because of ease of material handling as well as the extent to which it has been used in the US. Hydrated lime has been used on some of Progress Energy's generating units in North Carolina with encouraging results.

As shown in Appendix A- Figure 2, there are two new air emission sources associated with the dry sorbent storage and injection system. These new sources are related to potential emissions that occur when displaced air entrains dust particles as the sorbent storage vessels are filled. To minimize these

emissions, the exhaust from the storage vessels and the pneumatic conveyor are routed through fabric filters prior to exhausting to the ambient air; thus the fabric filters associated with each day silo for each unit are the only new emission points. Each silo has dedicated rotary valves and blowers for pneumatic delivery of the sorbent to sets of lances mounted in flue gas ducts at various locations. The sorbent storage system has a proposed flow rate of 2,000 cfm through the dust collection system during loading operations, which are estimated to occur for six hours per day. Appendix A also presents detailed calculations on material handling emissions from the proposed sorbent storage and transfer system. The emission estimates assume year-round operation and are therefore considered to be a conservative estimate of potential emissions. The PTE emissions from the proposed sorbent storage and injection systems for Units 4 and 5 at Crystal River Power Plant will be considered insignificant since the proposed activity emits less than 5 TPY of any criteria pollutant. New source review for the proposed project will not be triggered since the PTE $PM_{2.5}$ emission estimate is less than the 10 tons per year emission increase threshold.

2.2 Fuel Additives

PEF is also seeking authority to apply fuel additives to the coal in order to assess the enhancement of boiler performance and emissions control. The additive will be applied to the coal prior to combustion. The purpose of these demonstrations is to gather operational and emissions data to evaluate overall impacts in support of the use of fuel additives. If the demonstrations are successful, PEF may convert the temporary coal additive system to a permanent system.

Similar Progress Energy facilities outside of Florida have utilized coal additives to enhance boiler performance. The additives can reduce sulfur trioxide directly as an SO_3 sorbent and via reductions in the formation of boiler slag which has a concomitant effect of a reduction in particulate matter emitted from the boiler. Slag catalyzes the formation of sulfur trioxide. The sulfur trioxide thus formed in turn is potentially emitted as sulfuric acid mist which constitutes condensable PM. A lower amount of slag implies the potential for a lower amount of SO_3 formed in the furnace, ultimately resulting in a reduction in condensable particulate. An estimated 60 percent reduction in furnace SO_3 has been indicated by the vendor of the additives. Application rates will be based on the chemical composition of the coal.

In 2009, Environmental Energy Services, Inc. began working with Progress Energy on a trial plan to reduce SO_3 in the flue gas stream on Unit No. 2 at the Roxboro Steam Electric Plant located in Semora, North Carolina. The trial consisted of adding magnesium hydroxide slurry to the coal prior to combustion. Over the course of the trial, it was confirmed that the application of CoalTreat 300, a water based magnesium hydroxide slurry (60 percent $Mg(OH)_2$ in water) to the coal prior to combustion resulted in reductions in emissions of condensable particulates in the form of SO_3 (sulfuric acid mist or SAM) from the unit. Therefore, the additive is expected to have a positive effect on reductions in SAM emissions and total particulate emissions, due to potential decreases in condensable particulates.

Due to the success of the trial at the Roxboro Plant, PEF is proposing a similar trial at the CREC Units 4 and/or 5. PEF is proposing a similar trial program utilizing various coal additives as described in Appendix B. The evaluation may include applying a combination of products. Coal additives that may be used for slag reduction include Environmental Energy Services, Inc. (EES) Coaltreat 500, EES Coaltreat 700, magnesium oxide, and magnesium hydroxide. The Material Safety Data Sheets (MSDS) for selected products are presented in Appendix B. PEF will continue to consider other coal additives with equivalent materials that may be available at any given time. The initial demonstration will be conducted using magnesium hydroxide. The chemical composition of the additive materials indicates that there are no components that would result in unacceptable air quality impacts.

3.0 EXISTING PERMIT CONDITION REVISIONS

Revisions are requested to certain permit conditions in Air Construction Permit No. 0170004-023-AC. Specifically, PEF requests revisions to Condition 8.e (the stack opacity limit of 10 percent), as well as removal of, or a change in the terms of, the coal sulfur limit in Condition 6.a.

3.1 Term of Fuel Sulfur Limit

PEF is requesting that the current 3.13 percent maximum sulfur content limit in Condition 6.a be removed or modified to an equivalent SO_2 standard of 5.5 lb/mmBtu. While researching the coal market, it has come to PEF's attention that certain specifications of coal are higher in fuel sulfur level than the 3.13 percent limit, while still achieving the 5.5 lb/mmBtu SO_2 value that was the basis of the fuel sulfur limit (i.e., for the design coal assumed in the permitting). For example, if the coal had a fuel sulfur level of 3.2 percent and a heating value of 12,000 Btu/lb, it would still be less than the 5.5 lb/mmBtu SO_2 value of the design coal (which was based on a heating value of 11,375 Btu/lb). There are several areas where coal supplies exhibit similar quality (i.e., >3.13 percent sulfur and less than 5.5 lb/mmBtu SO_2), such as the example presented in Appendix C.

It is important to remember that the fuel sulfur limit was back-calculated from the maximum allowable modeled impact of SO_2 (i.e., the 0.27 lb/mmBtu SO_2 limit in the permit) and the design SO_2 removal efficiency assumed for the FGD system. Therefore, as long as the continuously monitored SO_2 emissions at the stack are achieving the allowable emission limit, the maximum fuel sulfur value of the fired fuel should not matter.

Regarding the potential effect that a higher percent sulfur coal could have on SAM emissions, the AMM and FGD systems combined have proven to be very effective at SAM emission reduction and there is currently a requirement to re-test SAM emissions whenever the coal sulfur level increases significantly (i.e., >0.5 percent). Further, in the event that the AMM control system was to be inactive, there are provisions for the units to switch to a substitute coal. Therefore, removing the fuel sulfur limit or revising the format of the allowable fuel sulfur standard to a lb/mmBtu SO_2 basis will have no discernable effect on SAM emissions.

3.2 Revision to Opacity Limit

PEF is requesting that the opacity standard in Condition 8.e when stack testing Units 4 and 5 be revised to an opacity standard of 15 percent. PEF had submitted comments on the opacity standard that was established in the initial draft air construction permit for the air pollution control project (Permit No. 0170004-016-AC). In the Final Determination for the final air permit that was issued, PEF made the following comment:

With respect to the opacity standard, PEF believes that the Department went beyond its authority in lowering the normal operations opacity standard to 10 percent. Although this may have been consistent with estimates provided to the agency related to the ESP upgrade project, as stated above, more recent information submitted to the Department does not support lowering the standard below the current 20 percent opacity limit. This standard is far in excess of the NSPS for coal-fired boilers and beyond BACT determinations for any existing, as well as most new coal-fired boilers.

The Department's response was basically that the opacity standard is intended to reflect BACT and not the BACT floor, which is the NSPS, and that it was based on the information in PEF's request for bid, which was requested by the Department as part of the data request for the ESP upgrade. A recent review of other coal-fired units recently permitted (BACT/LAER Clearinghouse, as presented in Appendix D) again confirms that there are very few units that have been assigned a BACT opacity of 10 percent, most of those are for new units, some of which were not actually constructed and in operation.

Recent tests for Units 4 and 5 were conducted under the new control equipment configuration. Test results indicated PM emissions of 0.0066 lb/mmBtu and 0.0074 lb/mmBtu for Units 4 and 5, respectively (i.e., 75-78 percent below the allowable PM limit). However, the corresponding opacity levels were 7.7 and 6.9 percent for Units 4 and 5, respectively. The higher than expected opacity levels may be due to several factors, including the stack configuration relative to the Method 9 observation procedure, as well as the effects of the new control equipment train.

The two plumes each exhaust from separate liners within the same stack and can be combining once exhausted into the atmosphere, causing higher observed visible emissions. That situation is further complicated since they have attached steam plumes which do not dissipate for some time down wind. When the VE is conducted, there is no recognizable difference between the two units' plumes regarding visible emissions. The observation is made after the water vapor plume has dissipated and at that point, the discharge plumes from both units are essentially combined as the stack exit points are so close together. There in not an adjustment in the Method 9 procedure for combined opacity plumes after they have exited the stack. To be clear, CREC Units 4 and 5 do not have a common stack by EPA's terminology, but a single stack with two exhaust liners.

4.0 REGULATORY APPLICABILITY

The regulations applicable to the boilers will remain unchanged from those indicated in the current Title V Operating Permit as a result of the proposed revisions discussed in the preceding sections. The request for a revision of the opacity standard will not affect PM emissions (which are already well below the revised standard) and is more related to perceived visibility with relation to the opacity standard and method. In addition, the request for revision to the fuel sulfur standard will not result in an associated emission increase. However, the addition of the temporary sorbent injection system will result in a slight increase in PM emissions due to the sorbent handling and storage. The emissions calculations for these insignificant units are presented in Appendix A of this report. The vented emissions from the proposed dry sorbent storage system will be subject to the following standards:

4.1 Control of Visible Emissions

Visible emissions from these sources will not be more than 20 percent opacity when averaged over a six-minute period. The bagfilters in the design specification will ensure compliance with this standard.

4.2 Prevention of Significant Deterioration

This regulation does not apply to the proposed changes because emissions of PSD compounds from the facility will decrease as a result of the installation of the sorbent injection system, as well as the other proposed revisions.

4.3 Particulates from Fugitive Non-Process Dust Emission Sources

The facility will not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. Haul roads and material handling operations will be maintained in a manner that will minimize fugitive dust emissions.

5.0 PROPOSED PERMIT LANGUAGE

This section of the application serves to provide suggested permit language to address the requested revisions addressed above. Specifically, the permit revisions would allow for temporary operation of an alternative sorbent injection system for SAM control, as well as the application of fuel additives (e.g., magnesium oxide) for enhanced boiler operation. In addition, revisions are requested to certain permit conditions in Air Construction Permit No. 0170004-023-AC, including to Condition 8.e (the stack opacity limit of 10 percent), as well as a change to the terms of the coal sulfur limit of 3.13 percent provided in Condition 6.a. These requested permit revisions are with respect to the following units:

Emission Unit Number	Emission Unit Description
003	Unit 5 is a fossil fuel-fired, electric utility steam generator.
004	Unit 4 is a fossil fuel-fired, electric utility steam generator.

5.1 Demonstration Projects—Temporary Authorization and Restrictions

1. Alternative Sorbent Injection Systems and Use of Fuel Additives: For Units 4 and 5, the permittee is temporarily authorized to operate an alternative sorbent injection system and to apply fuel additives to currently authorized coal blends (bituminous coal). The preliminary schedule is to install the required equipment and commence the trial during the first half of calendar year 2011. The purpose of the trial period is to evaluate the impact of sorbent injection and fuel additives on emissions control and unit performance. Various sorbent injection rates and fuel additive application rates will be tested. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to use these processes. *{Permitting Note: Based on previous demonstration projects and engineering judgment, the applicant expects improved operational and emissions performance and no increase in stack emissions of any permitted pollutant.}* [Application No. 0170004-024-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

2. Performance Requirements: The permittee shall provide the Compliance Authority with a preliminary schedule for conducting trial demonstrations and performance tests and shall update this schedule as necessary. During each demonstration, the permittee shall comply with all terms and conditions in the current Title V air operation permit, with the exception of short-term SAM excursions that may occur while evaluating sorbent injection modes (sorbent type, rate, injection location) during the demonstration period. If a demonstration results in operation that is not in accordance with the conditions of the Title V permit or the demonstration protocol, the demonstration shall cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The demonstration shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-024-AC; Rule 62-4.070(3), F.A.C.]

3. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

4. Demonstration Report: Within 60 days of completing the demonstration, the permittee shall submit a final report summarizing the results of the demonstration to the Bureau of Air Regulation and the Compliance Authority. The final report shall provide the following: the actual schedule and overall description of the demonstration; any operational issues related to the sorbent injection system, the fuel additive; a comparison of baseline operation versus operation with the sorbent and the fuel additive; an evaluation of equipment compatibility with the demonstration projects; a summary and comparison of continuous emissions and opacity monitoring data; a summary and comparison of the specified operational parameters; and a summary and comparison of emissions test results. [Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

5.2 Permit Revision to Fuel Sulfur Limit

The modification of air construction Permit No. 0170004-023-AC is also requested in order to remove, or revise the format of, the maximum fuel sulfur limit, for the reasons detailed in Section 3. 1 of this application report.

Option 1 (removal):

Condition 6.a – Authorized Fuels: In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20 percent sub-bituminous coal upon issuance of this permit. ~~Coal fuel blends shall not exceed a maximum sulfur content of 3.13 percent by weight~~

Option 2 (modification):

Condition 6.a – Authorized Fuels: In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20 percent sub-bituminous coal upon issuance of this permit. Coal fuel blends shall not exceed a maximum sulfur content equivalent to 5.5 lb/mmBtu SO_2 ~~of 3.13 percent by weight~~.

5.3 Permit Revisions to Opacity Limit

PEF is requesting that the opacity standard in Condition 8.e when stack testing Units 4 and 5 be revised to an opacity standard of 15 percent, for the reasons detailed in Section 3. 2 of this application report.

Therefore, PEF requests the following language revision:

Condition 8.e -- Opacity: As determined by EPA Method 9, the stack opacity shall not exceed ~~10~~ 15% based on a 6-minute block average, except for one 6-miniute period per hour of not more than 20%.

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APPENDIX A
ALTERNATIVE DRY SORBENT DEMONSTRATION SPECIFICATIONS

Figure 1. Proposed Sorbent Injection Point Locations
Units 4 and 5, Crystal River Power Plant

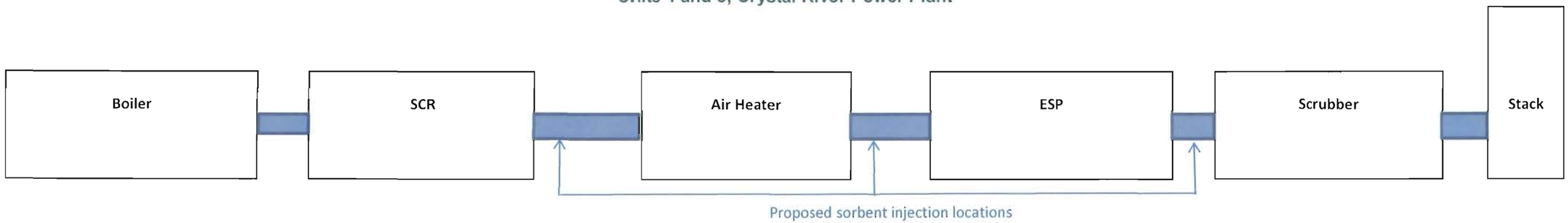
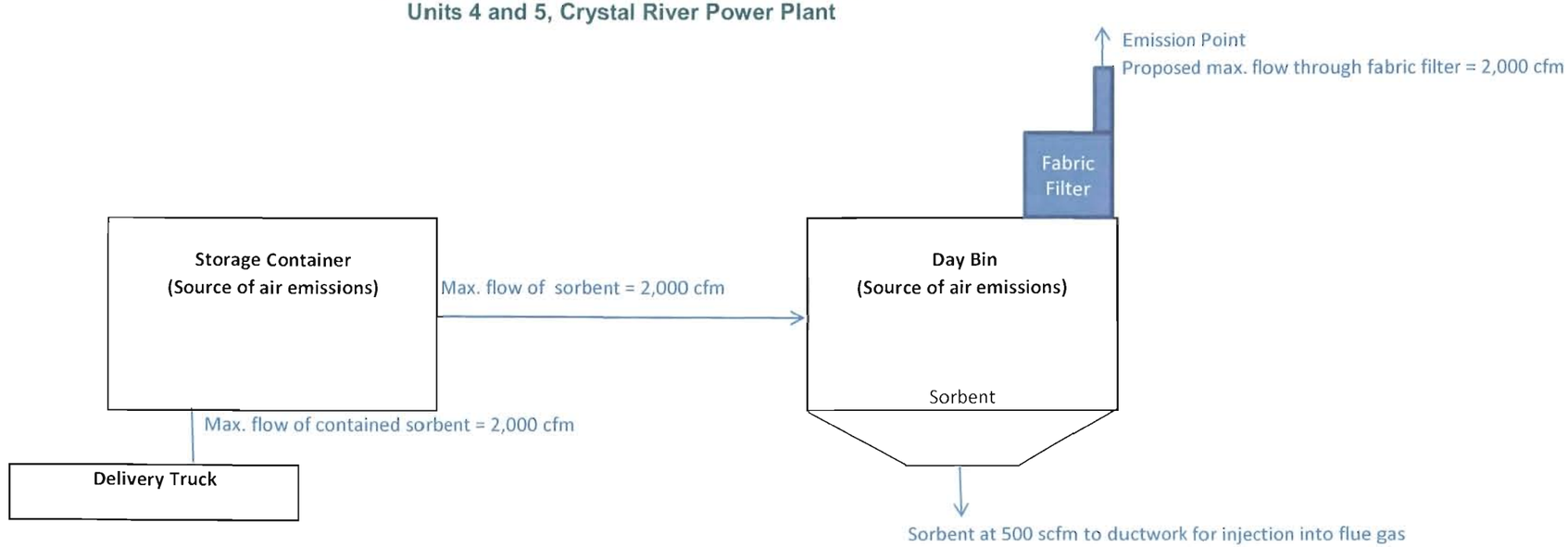


Figure 2. Proposed Sorbent Injection System
Units 4 and 5, Crystal River Power Plant



Golder Associates

SUBJECT:	Proposed Sorbent Injection System Unit 4 and 5, Crystal River Power Plant, Florida				
Job No.	103-89644	**Made by:**	VKF	**Date:**	12/22/2010
Ref.		**Checked:**		**Sheet:**	1 of 1
		Reviewed:			

OBJECTIVE: Calculate the potential to emit (PTE) emissions from the proposed sorbent injection systems for Units 4 and 5 at Crystal River Power Plant.

APPROACH: Use manufacturer guaranteed emission factors and filtration efficiencies to calculate the potential to emit (PTE) for the proposed project.

SOLUTION: A delivery truck will pneumatically fill the storage container (cement pig) or the day bin directly with sorbent. The delivery truck will unload the sorbent at 2,000 scfm for a proposed duration of two hours twice a day (4 hour total). The sorbent will be transferred at 2,000 scfm from the storage container to the day bin for a proposed duration of one hour twice a day (2 hour total). The proposed sorbent injection system may be installed on both units, Unit 4 and 5. See Figure 2 of the application for the proposed process diagram of the sorbent injection system.

Emission Factors:

Pollutant	Emission Factors	Units	Source
PM*	See PM2.5	Grains/ACF	BGRS Inc., Manufacture's Specifications, Attachment A
PM10*	See PM2.5	Grains/ACF	BGRS Inc., Manufacture's Specifications, Attachment A
PM2.5	0.015	Grains/ACF	BGRS Inc., Manufacture's Specifications, Attachment A

*PM and PM10 are incorporated in PM2.5

Parameters:

Flow Rate	2000	cfm/unit	
Hours of Operation	6	hrs/day	Assumed maximum
Number of Fabric Filters	2	fabric filter/unit	Assumed maximum

Calculations:

Unit 4:

$$\frac{2{,}000\ ft^3}{min} \times \frac{0.015\ grains\ PM2.5}{ft^3} \times \frac{1\ pound\ PM2.5}{7000\ grains\ PM2.5} \times \frac{60\ minutes}{1\ hour} \times \frac{6\ hour}{1\ day} \times \frac{365\ days}{1\ year} = 563.1\ \frac{lbs\ PM2.5}{year}$$

Unit 5:

$$\frac{2{,}000\ ft^3}{min} \times \frac{0.015\ grains\ PM2.5}{ft^3} \times \frac{1\ pound\ PM2.5}{7000\ grains\ PM2.5} \times \frac{60\ minutes}{1\ hour} \times \frac{6\ hour}{1\ day} \times \frac{365\ days}{1\ year} = 563.1\ \frac{lbs\ PM2.5}{year}$$

Proposed Project Total PM2.5:	1,126.3	lbs PM2.5 / year	=	0.6 ton PM2.5 / year

CONCLUSION:

The PTE emissions from the proposed sorbent injection systems for Units 4 and 5 at Crystal River Power Plant will be considered insignificant since the proposed activity emits less than 5 TPY of any criteria pollutant. New source review for the proposed project will not be triggered since the PTE PM2.5 emission estimate is less than the 10 tons per year increase.

ATTACHMENT A

BGRS INC., MANUFACTURE'S SPECIFICATION

BGRS INC.

MODEL DC6-E PORTABLE DUST COLLECTOR

Specifications	#85000023A, rev. 5/09
Performance Capacity	• 6,000 CFM @ 11.5" W.G. Static Pressure • 5,000 CFM @ 14" W.G. Static Pressure
Construction	• Carbon Steel Construction With Top Removal Filter Design • Portable With Telescoping "Drop" Legs • NEMA 4, 480V, 3 Ph, 60 Hz Motor Starter
Filter Media	• Pleated Polyester Filter Elements, Vertically Hung, For Natural Release Of Dust. • Filtration Efficiency: 99.9% + 2 Micron (.015 Grains/ACF) • 1226 Sq. Ft. Media Area • Air-To-Cloth Ratio: 4.89:1 @ 6,000 CFM 4:1 @ 5,000 CFM
Cleaning System	• Reverse Pulse-Jet Type Continuous Cleaning System • 6" Diameter Air Manifold With Pressure Gauge and Regulator • 115 VAC Solenoids With Timer Control In NEMA 4 Enclosure
Ducting Connections	• One – 16" Diameter Rear Inlet Slip Fit Connector
Driver	• 20 HP 480 VAC Electric Motor • Constant Speed V-Belt Drive
Dust Disposal	• Shut-off Valve And 55 Gallon Drum Cover Kit Provided
Dimensions & WT.	• 6' Wide x 11' Long Structural Steel Frame • 10'-2" Tall When Lowered • 13'-11" Tall Maximum Elevated Height • Total Empty Weight: 3700#
Options	• Damper, Fan Outlet
Operating Requirements	• 30 Amp, 480 Volt, 3Ph, 60Hz. Power • 2 Amp, 120 Volt, 1Ph, 60Hz. Power • 10 CFM @ 80 P.S.I.G. Clean, Dry, Oil Free Compressed Air; ¾" Minimum Supply Line Size

10440 Windfern Rd.* Houston, Texas 77064-5297 * 281-890-6862 * Fax:281-890-7949
888-746-4973

APPENDIX B
FUEL ADDITIVE MATERIAL SAFETY DATA SHEET SPECIFICATIONS

Environmental Energy Services, Inc.

COALTREAT 300™
Magnesium Hydroxide Slag Modifier

Material Safety Data Sheet

Environmental Energy Services, Inc.
5 Turnberry Lane
Sandy Hook, CT 06482

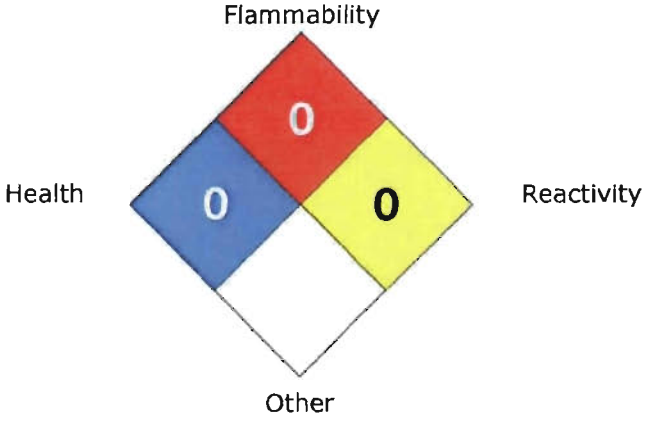
Conforms to OSHA 29 CFR 1910, 1200
Emergency Number:
203-270-0337

Section 1: Identification	
Trade Name (as listed on label):	COALTREAT 300™ Magnesium Hydroxide Slag Modifier
Section 2: NFPA Hazard Classification (See Page 2)	
Health Hazard:	0
Reactivity:	0
Fire Hazard:	0
Specific Hazard:	None
Section 3: Hazardous Ingredients	
OSHA PEL:	None
ACGIH TLV:	None
Other:	None
%:	None
Section 4: Physical and Chemical Properties	
Boiling Point:	212°F
Vapor Pressure (mm Hg):	<10
Vapor Density (Air = 1):	>1.0
Solubility in Water:	Dispersible
Specific Gravity (H_2O = 1):	1.48
Melting Point:	N/AP
Evaporation Rate (Butyl Acetate = 1):	<1.0
Appearance and Odor:	Opaque white liquid with no discernible odor
Section 5: Fire and Explosion Hazard Data	
Flash Point:	Non-flammable
UEL:	N/AP
Special Fire-Fighting Procedures:	N/AP
Flammable Limits - LEL:	N/AP
Extinguishing Media:	N/AP
Unusual Hazards:	None
Section 6: Reactivity Data	
Stability:	Stable
Hazardous Decomposition/Products:	None
Conditions to Avoid:	None
Hazardous Polymerization:	No
Incompatibility (Materials to Avoid):	Accidental direct contact with acidic materials will neutralize the magnesium hydroxide and render it unsuitable for its intended purpose.

Section 7: Health Hazard Data	
Routes of Entry:	
Inhalation:	No
Skin:	Yes
Ingestion:	No
Carcinogenecity:	
NTP:	No
IARC Monograph:	No
OSHA Reg.:	No
Signs and Symptoms of Exposure:	
Eye Contact:	Mild to moderate irritation
Accidental Ingestion:	Abdominal cramps and diarrhea
Emergency and First Aid Procedures:	
Eye Contact:	Flush thoroughly with water; seek medical attention if irritation persists.
Ingestion:	Drink several glasses of water; seek medical attention if cramping and diarrhea persists.
Health Hazards (acute and chronic):	Mild to moderate irritation of eye membranes with possible transient corneal injury. Frequent skin contact will cause dryness.
Medical Conditions Generally Aggravated by Exposure:	None determined

Section 8: Precautions for Safe Handling and Use	
Steps to be taken if material is released or spilled:	Flush small spills with water into sanitary sewer system. Dike large spills and landfill.
Waste Disposal Method:	Flush small spills with water into sanitary sewer system. Landfill large quantities in accordance with existing regulations.
Precautions to be taken in Handling and Storage:	Store product at temperatures below 100°F and above freezing (32°F)
Other Precautions:	Keep away from children.

NFPA Rating



Section 9: Control Measures	
Respiratory Protection:	None required
Eye Protection:	Goggles are required
Ventilation:	None required
Work and Hygiene Practices:	Good housekeeping practices should be observed
Other Protective Clothing/Equipment:	None
Protective gloves are recommended if prolonged skin contact is possible.	

Section 10: Legend	
UK:	Unknown
AP:	Approximately
N/AP:	Not applicable
N/DA:	No data available

Section 11: NFPA Code	
Health Hazard:	
0:	Normal material
1:	Slightly hazardous
2:	Hazardous
3:	Extreme danger
4:	Deadly
Reactivity:	
0:	Stable
1:	Unstable if heated
2:	Violent chemical change
3:	Shock and heat may detonate
4:	May detonate
Fire Hazard (Flash Points):	
0:	Will not burn
1:	Above 200°F
2:	Below 200°F
3:	Below 100°F
4:	Below 73°F
Specific Hazards:	
OXY:	Oxidizer
ACID:	Acid
ALK:	Alkali
COR:	Corrosive
N/W:	Use no water

Environmental Energy Services, Inc.

EES® COALTREAT 500™

Slag Modifier

Material Safety Data Sheet

Environmental Energy Services, Inc.
5 Turnberry Lane
Sandy Hook, CT 06482

Emergency Phone:
CHEMTREC: 800-424-9300
EES®: 203-270-0337
Business Phone: 203-270-0337

PART I: What is the material and what do I need to know in an emergency?

Section 1: PRODUCT IDENTIFICATION	
Trade Name (as labeled):	CoalTreat 500™ slag modifier
Chemical Name/Class:	Mineral, magnesite -3/4" raw ore
Technical Bulletins:	CoalTreat 500
Product Use:	A raw magnesite for slag mitigation
MSDS Preparation Date:	October 31, 2007
Health (Blue):	0
Flammability (Red):	0
Reactivity (Yellow):	0
Protective Equipment:	B
Respiratory:	See Section 8
See Section 16 for definition of ratings.	

Section 2: COMPOSITION AND INFORMATION ON INGREDIENTS

			Exposure Limits in Air					
			ACGIH		OSHA			
Chemical Name	**CAS #**	**% v/v**	**TLV Mg/m³**	**STEL Mg/m³**	**PEL Mg/m³**	**STEL Mg/m³**	**IDLH Mg/m³**	**Other**
Raw Magnesite (Magnesium Carbonate)	546-93-0	100%	NE	NE	Nuisance Particulate, TWA 15mg/m3	NE	NE	NE

NE = Not Established C = Ceiling

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1993 format.

Section 3: HAZARD INFORMATION	
Emergency Overview:	A gray to light brown stone
Symptoms of Overexposure by Route of Exposure:	Target Organs: Chronic overexposure to dust may cause lung damage. Primary route of entry: Inhalation Acute effects: Particulate may cause eye and upper respiratory irritation.
Inhalation:	Product dust is classified as a "nuisance particulate, not otherwise regulated" as specified by ACGIH and OSHA. The excessive, long-term inhalation of mineral dusts may contribute to the development of industrial bronchitis, reduced breathing capacity, and may lead to the increased susceptibility to lung disease.
Contact with Skin or Eyes:	Low toxicity by skin contact. Particulate is a physical eye irritant.
Skin Absorption:	Skin absorption is not a significant route of overexposure for the components of this product.
Ingestion:	An unlikely route of exposure. If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting and diarrhea.
Injection:	Accidental injection of this product, via laceration or puncture by a contaminated object, may cause pain and irritation in addition to the wound.
Health Effects or Risks from Overexposure: *An explanation in Lay Terms.*	
In the event of overexposure, the following symptoms may be observed:	
Acute:	The primary hazard associated with this product is the potential for moderate irritation of the eyes, and upper respiratory irritation.
Chronic:	May cause lung damage
Target Organs:	lungs

PART II: What should I do if a hazardous situation occurs?

Section 4: FIRST-AID MEASURES	
Skin Exposure:	Wash affected areas with mild soap and water.
Eye Exposure:	Flush eyes, including under the eyelids, with large amounts of water. If irritation persists, seek medical attention.
Inhalation:	Remove victim to fresh air. If not breathing, give artificial respiration. Get immediate medical attention.
Ingestion:	Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious, give 1-2 glasses of water or milk. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

Section 5: FIRE-FIGHTING MEASURES		
NFPA code: Flammability: 0, Health: 0, Reactivity: 0, Special: 0.		
Flash Point:		Not Combustible
Flammable Limits (in air by volume %)		**Lower (LEL):** Not applicable
		Upper (LEL): Not applicable
Fire Extinguishing Materials:		
Water Spray:		Yes
Foam:		Yes
Halon:		Yes
Carbon Dioxide:		Yes
Dry Chemical:		Yes
Other:		Any "ABC" Class
Unusual Fire and Explosion Hazards:	None	
Explosion Sensitivity to Mechanical Impact:		Not sensitive
Explosion Sensitivity to Static Discharge:		Not sensitive
Firefighting Instructions:	Firefighters should wear NIOSH-approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.	

Section 6: ACCIDENTAL RELEASE MEASURES	
Spill and Leak Response:	No special requirements

PART III: How can I prevent hazardous situations from occurring?

Section 7: HANDLING AND STORAGE	
Storage and Handling Practices:	No special storage instructions. Minimize dust generation during material handling and transfer.
Section 8: EXPOSURE CONTROLS – PERSONAL PROTECTION	
Ventilation and Engineering Controls:	None required
Personal protective equipment::	gloves and long sleeve clothing is recommended.
Respiration protection:	None required
Hygienic practices:	Avoid contact with skin. After handling this product, wash hands before eating or drinking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	gray to light brown, odorless stone
Boiling Point:	Losses CO2 at 900°C
Melting Point:	>3800°F (>2100°C)
Water Solubility:	Insoluble
pH (10% aqueous slurry):	Insoluble
Bulk Density (g/cc):	Var. 1.36 - 1.76
Bulk Weight (lbs/cu.ft.)	Var. 85 - 110
% Volatile by volume:	0
Evaporation rate:	Not Applicable

Section 10: STABILITY AND REACTIVITY	
Stability:	Stable
Decomposition Products:	Heat and Steam
Materials with which Substance is Incompatible:	Magnesium carbonate is incompatible with formaldehyde; is soluble in aqueous acids.
Hazardous Polymerization:	Will not occur

PART IV: Is there any other useful information about this material?

Section 11: TOXICOLOGICAL INFORMATION	
Magnesium Carbonate (magnesite) CAS #546-93-0	Toxic and Hazard Review (Sax): a general purpose food additive: No LD50 or LC50 found for oral, dermal, or inhalation routes of administration.

Section 12: ECOLOGICAL INFORMATION	
Ecotoxicological/Chemical Fate Information:	No data available on any adverse effects of this material on the environment.

Section 13: DISPOSAL CONSIDERATIONS	
Waste Management/Disposal:	This product does not exhibit any characteristics of a hazardous waste. The product is suitable for landfill disposal. Follow all applicable federal, state and local regulations for safe disposal.

Section 14: TRANSPORTATION INFORMATION	
THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION	
US DOT:	Not regulated by DOT as a hazardous material. No hazard class, no label or placard required, no UN or NA number assigned
Transport Canada Transportation of Dangerous Goods Regulations:	NOT REGULATED

Section 15: REGULATORY INFORMATION	
ADDITIONAL UNITED STATES REGULATIONS	
U.S. SARA Reporting Requirements:	This product does not contain any substances reptable under Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act. Sections 311 and 312 do apply. (Routine Reporting and Chmical Inventories).
U.S. TSCA Inventory Status:	All substances in this product are listed in the Chemical Substance Inventory of the Toxic Substances Control Act.
CERCLA Hazardous Substance List, RQ:	No

Section 16: OTHER INFORMATION

DEFINITIONS OF TERMS

A LARGE NUMBER OF ABBREVIATIONS AND ACRONYMS APPEAR ON AN MSDS. SOME OF THESE WHICH ARE COMMONLY USED INCLUDE THE FOLLOWING:

CAS #:	This is the Chemical Abstract Service Number that uniquely identifies each constituent. It is used for computer related searching.

EXPOSURE LIMITS IN AIR:

ACGIH – American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. TLV – Threshold Limit Value; an airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (TWA), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (C). Skin absorption effects must also be considered. OSHA – U.S. Occupational Safety and Health Administration. PEL – Permissible Exposure Limit. This exposure value means exactly the same thing as a TLV, except that it is forcible by OSHA. The OSHA Permissible Exposure Limits are based in the 1969 PELs and the June, 1993 Air Contaminates Rule (Federal Register: 58:35338-35351 and 58:40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL THAT was vacated by Court Order. IDLH – Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30 minutes without suffering, preventing escape or permanent injury. The DFG-MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. NIOSH is the national institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Association (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELS) when no exposure guidelines are established, an entry of NE is made for reference.

HAZARD RATINGS:

HAZARD MATERIALS IDENTIFICATION SYSTEM:

Health Hazard: 0 (minimal acute or chronic exposure hazard); 1 (slight acute or chronic exposure hazard); 2 (moderate acute or significant chronic exposure hazard); 3 (severe acute exposure hazard; one-time overexposure can result in permanent injury and may be fatal); 4 (extreme acute exposure hazard; one-time overexposure can be fatal)

Flammability Hazard: 0 (minimal hazard); 1 (materials that require substantial pre-heating before burning); 2 (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); 3 (Class 1B and 1C flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C (100°F)

Reactivity Hazard: 0 (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); 2 (materials that are unstable but do not detonate or which can react violently with water); 3 (materials that can detonate when initiated or which can react explosively with water); 4 (materials that can detonate at normal temperatures or pressures)

Section 16: OTHER INFORMATION (continued)

NATIONAL FIRE PROTECTION ASSOCIATION:

Health Hazard: 0 (material that, on exposure under fire conditions, would offer no hazard beyond that of ordinary combustible materials); 1 (materials that on exposure under fire conditions could cause irritation or minor residual injury); 2 (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); 3 (materials that can, on short exposure, cause serious, temporary, or residual injury); 4 (materials that under very short exposure causes death or major residual injury)

Flammability Hazards and Reactivity Hazard:

Refer to definitions for "Hazardous Materials Identification System"

FLAMMABILITY LIMITS ON AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**).

Flash Point: minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. ***Autoignition Temperatures:*** the minimum temperature required to initiate combustion in air with no other source of ignition. ***LEL:*** the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. ***UEl:*** the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids and liquids) which kills 50% of the exposed animals; LC_{50} – Lethal Concentration (gases) which kills 50% of the exposed animals; ***ppm*** – concentration expressed in weight of substance per volume of air; ***mg/m³*** – concentration expressed in weight of substance per volume of air; ***mg/kg*** - quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: ***IARC*** – the International Agency for Research on Cancer; ***NTP*** – the National Toxicology Program; RTECS – the Registry of Toxic Effects of Chemical Substances; ***OSHA*** and ***CAL/OSHA***. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1-4. Subrankings (2A, 2B, etc) are also used. Other measures of toxicity include ***TDLO***, the lowest dose to cause a symptom; ***TDO, LDLO***, and ***LDO***, or ***TC, TCO, LCLO***, and ***LCO***, the lowest dose (or concentration) to cause lethal or toxic effects. ***BEI*** – Biological Exposure Indices, represent the level of determinants, which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the ***TLV. EC*** – Ecological Information is the effect concentration in water.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. ***EPA*** is the U.S. Environmental Protection Agency. ***WHMIS*** is the Canadian Workplace Hazardous Materials Information System. ***DOT*** and ***TC*** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act ***(SARA)***; the Canadian Domestic/Non-Domestic Substances List ***(DSL/NDSL)***; the U.S. Toxic Substance Control Act ***(TSCA)***; Marine Pollutant status according to the DOT; the Comprehensive Environmental Response, Compensation and Liability Act ***(CERCLA or SUPERFUND)***; and various state regulations.

Chemical Formula: Primarily $CaCO_3$

Trade Names: OMYACARB® 3 - FL OMYACARB® 4 - FL OMYACARB® 5 - FL

Producer: Omya Inc.

Address: 61 Main Street Proctor, Vermont, USA 05765

Telephone: (802) 459-3311

Emergency: (800) 424-9300 (CHEMTREC)

SECTION 2 – HAZARDOUS INGREDIENTS

Ingredients:	Dry Wt. % (typical):	CAS #:	Exposure Limits (TWA) mg/m³:
Limestone (calcium carbonate)	> 99	1317-65-3	ACGIH TLV: Total dust, 10 (<1% silica) OSHA PEL: Total dust, 15 Respirable dust, 5
Silica, total quartz *(naturally-occurring component of limestone)*	0.3	14808-60-7	OSHA PEL: Total dust, 30 / % silica + 2
Silica, respirable quartz *(naturally-occurring component of limestone)*	< 0.1	14808-60-7	ACGIH TLV: Respirable dust, 0.05 OSHA PEL: Respirable dust, 10 / % silica + 2

Note: Slurry forms of this product may be preserved with low levels (<0.1%) of an antimicrobial agent(s).

Hazardous Materials Identification System: (National Paint & Coatings Association)	Category	Rating
	Health	1*
	Flammability	0
	Physical Hazard	0

SECTION 3 – PHYSICAL CHARACTERISTICS

Appearance and Odor: White powder or slurry, mild odor with slurry.

Density (dry): 2.7 g/ml

Specific Gravity (slurry): 1.5 to 2.0

Solubility in Water: 1.3 mg/100 g @ 18°C

pH (slurry): 9.5 to 10.0

SECTION 4 – FIRE AND EXPLOSION DATA

Flash Point: Non-flammable

Special Fire Fighting Procedures: None.

Unusual Fire and Explosion Hazards: None.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: Thermal decomposition can produce calcium oxide and carbon dioxide.

Incompatibility (Material to Avoid): Reacts with acids to liberate carbon dioxide. Ignites on contact with fluorine. Also incompatible with alum and ammonium salts.

SECTION 6 – TOXICOLOGICAL PROPERTIES AND HEALTH HAZARD DATA

EFFECTS AND HAZARDS OF ACUTE EXPOSURE:

Inhalation: Dust may irritate the respiratory tract. Symptoms include sneezing and slight nose irritation.

Eye Contact: Irritation. Symptoms include watering and irritation.

Skin Contact: Repeated or prolonged exposure may have a drying effect on the skin, and may also cause irritation.

Ingestion: Ingestion of very large quantities may result in intestinal obstruction and/or constipation.

EFFECTS AND HAZARDS OF CHRONIC EXPOSURE:

There are no reported health effects associated with repeated or prolonged exposure to pure calcium carbonate. Chronic exposure to limestone dust at concentrations exceed ng occupational exposure limits may cause pneumoconiosis (lung disease). This product contains crystalline silica (quartz) as an impurity. Chronic exposure to crystalline silica dust at concentrations exceeding occupational exposure limits may cause silicosis. The NTP's Ninth Report on Carcinogens lists crystalline silica (respirable size) as a known human carcinogen. IARC concluded that there is sufficient evidence in humans for the carcinogenicity of inhaled (respirable) crystalline silica.

SECTION 7 – PREVENTIVE MEASURES

Handling: Administrative and/or engineering controls, such as, but not limited to, process enclosure and exhaust ventilation may be necessary to control dust exposures. Supply sufficient replacement air to make up for air removed by exhaust systems. If engineering controls and work practices are not effective in controlling exposures, appropriate personal protective equipment, including a NIOSH/OSHA approved dust respirator should be worn. Where repeated or prolonged contact with hands is likely, appropriate gloves should be used. Appropriate eye protection should be worn. Selection of personal protective equipment should be performed by an Industrial Hygienist or other qualified professional.

Storage: Store in closed containers in a dry place separate from incompatible materials. Protect all products from freezing.

Spills/Leaks: Measures should be taken to minimize and protect against airborne dust during cleanup operations, including use of respiratory protective equipment if necessary.

Disposal: From a waste perspective, this product is not considered hazardous and may be disposed of as solid waste in accordance with applicable federal, state, provincial, and local regulations.

SECTION 8 – FIRST AID MEASURES

Inhalation: Remove to fresh air. Obtain medical advice if required.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 10 minutes holding the eyelid(s) open. If irritation persists, obtain medical advice immediately.

Skin Contact: Wash with warm water and mild soap. If irritation occurs, obtain medical advice immediately.

Ingestion: Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. Rinse mouth thoroughly with water. Do not induce vomiting. Drink 8 to 10 ounces (240 to 300 ml) of water to dilute material in stomach. Obtain medical advice immediately.

SECTION 9 – REGULATORY INFORMATION

TSCA: This product primarily is natural calcium carbonate from limestone ore which is listed on the U.S. EPA TSCA inventory under Limestone, CAS# 1317-65-3. In addition, all other ingredients and/or processing aids are also on the TSCA inventory.

DSL: By virtue of its status as a "substance occurring in nature", ground limestone is considered to be on the Canadian Domestic Substances List. In addition, all other ingredients and/or processing aids are also on the DSL.

CONEG: Being derived from limestone ore, this product may contain incidental trace levels of naturally occurring metals. However, no metals are intentionally added and this product complies with the CONEG requirement of <100 ppm of Cd, Cr^{+6}, Pb, and Hg.

ODC's: This product does not contain, nor is it manufactured with, any U.S. EPA-defined Class I or Class II ozone-depleting chemicals.

FDA: This product may be used as an indirect food additive in food packaging applications under 21 CFR (FDA) 174.5, 175.300, and 178.3297. It does not qualify as a substance permitted for direct addition to human food or animal feed.

SECTION 10 – PREPARATION INFORMATION FOR MATERIAL SAFETY DATA SHEET

Prepared by Technical Support Group

The information contained herein has been compiled by Omya from sources it considers reliable, and is accurate to the best of Omya's knowledge. Before using the product identified hereon, the foregoing MSDS and the product label should be read carefully. The information contained herein relates only to the product identified hereon, and does not relate to its use in combination with any other material or in any process. Customers are encouraged to conduct their own tests concerning the use of the product identified hereon as each customer's manner and conditions of use and handling may involve additional considerations. Omya assumes and shall incur no liability for any damages, losses, injuries, costs, or consequential damages that may result from the use or misuse of the product identified hereon, and the recipient assumes all of such liability.

EES® COALTREAT 700™
Slag Modifier

Material Safety Data Sheet

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Aluminum Nitrate Solution

Product Use: Various Industrial Applications

Manufacturer Information

Environmental Energy Services, Inc.
5 Turnberry Lane
Sandy Hook, CT 06482

Phone: 203-270-0337
Fax: 203-426-0150
Emergency # CHEMTREC: (800) 424-9300

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
7784-27-2	Aluminum nitrate nonahydrate	60
7732-18-5	Water	40

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Nitrates, inorganic, n.o.s., Water Dissociable Nitrate Compounds, Aluminum, soluble salts.

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview

This product is a colorless to slightly green, odorless solution. This product is an oxidizer in its dry form. This product may cause moderate to severe irritation of the eyes, skin, and other contaminated tissue.

Potential Health Effects: Eyes

Contact with the eyes can cause moderate irritation. Symptoms may include discomfort or pain and redness. Severe overexposure can result in swelling of the conjunctiva along with tissue damage.

Potential Health Effects: Skin

This product is moderately irritating to the skin and other contaminated tissue. Depending on the duration of contact, symptoms will include reddening, discomfort, irritation, and possible tissue damage. Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis. Skin absorption is not a significant route of overexposure.

Potential Health Effects: Ingestion

Ingestion of this product can be harmful or fatal. Immediately upon contact, this product will cause irritation and burns of the mouth, throat, esophagus, and other tissues of the digestive system. Overexposure symptoms include: nausea, abdominal pain, vomiting, and diarrhea. Severe ingestion overexposures can result in convulsions and collapse. The nitrate component of this product may damage the oxygen transport system of the blood. Severe ingestion exposures can be fatal. Repeated ingestion of small amounts of this product may cause weakness, depression, headaches, and mental impairment.

Potential Health Effects: Inhalation

Inhalation of vapors, mists, or sprays of this product may irritate the nose, throat, and lungs. Symptoms may include: sneezing, coughing and difficulty breathing. Most symptoms are alleviated, when the overexposure ends.

HMIS Ratings: Health: 2 **Fire:** 0 **Physical Hazard:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. Have contaminated individual "roll" their eyes. Seek immediate medical attention.

First Aid: Skin

Immediately take off all contaminated clothing. For skin contact, flush with large amounts of water. If irritation persists, get medical attention.

First Aid: Ingestion

Do not induce vomiting. Call a physician immediately.

First Aid: Inhalation

Move person to non-contaminated air. Call a physician if symptoms develop or persist.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not Flammable
Upper Flammable Limit (UFL): Not Applicable
Auto Ignition: Not Flammable
Rate of Burning: Not Applicable
Method Used: Not Applicable
Lower Flammable Limit (LFL): Not Applicable
Flammability Classification: Not Applicable

General Fire Hazards

This product is an aqueous mixture, which will not burn. If evaporated to dryness, the solid residue may pose a slight fire hazard. This product is an oxidizing agent, which may cause spontaneous ignition of combustible materials.

Hazardous Combustion Products

Decomposition of this product may produce acrid vapors, aluminum compounds, and oxides of nitrogen.

Extinguishing Media

Use any media suitable for the surrounding fires.

Fire Fighting Equipment/Instructions

Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

NFPA Ratings: Health: 2 **Fire:** 0 **Reactivity:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean up. Contain the discharged material and dike the spilled material where possible. Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways. Avoid contact with combustible materials.

Clean-Up Procedures

Absorb spill with inert material. Shovel material into appropriate container for disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

Follow all Local, State, Federal and Provincial regulations for disposal.

*** Section 7 - Handling and Storage ***

Handling Procedures

Do not get this material in your eyes, on your skin, or on your clothing. Avoid breathing vapors or mists of this product. Wash thoroughly after handling. Do not eat, drink or use tobacco products when handling this material. Use this product with adequate ventilation. Launder work clothes frequently. See Section 8 for appropriate protective clothing, equipment and air monitoring procedures.

Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual liquid or vapors. Empty containers should be handled with care.

Storage Procedures

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see SECTION 10: Stability and Reactivity). Material should be stored in secondary containers, or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits

Aluminum nitrate nonahydrate (7784-27-2)

ACGIH: 2 mg/m3 TWA (as Al) (related to Aluminum, soluble salts)
OSHA Vacated: 2 mg/m3 TWA (as Al. Listed under 'Aluminum') (related to Aluminum, soluble salts)
NIOSH: 2 mg/m3 TWA (as Al) (related to Aluminum (soluble salts))

Engineering Controls

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses; chemical goggles (if splashing is possible).

Personal Protective Equipment: Skin

Use impervious gloves. Use of an impervious apron is recommended.

Personal Protective Equipment: Respiratory

Respiratory protection; not normally required for ambient air concentrations not exceeding the Occupational Exposure Limit. Respirators should be selected by and used under the direction of a trained health and safety professional following the requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training and fit testing, exposure assessments, maintenance, inspection, cleaning and convenient, sanitary storage must be implemented.

Personal Protective Equipment: General

Eyewash fountains and emergency showers are required.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Colorless to slightly green	**Odor:**	Odorless
Physical State:	Liquid	**pH:**	0-2
Vapor Pressure:	Not Applicable	**Vapor Density:**	Not Applicable
Boiling Point:	~100°C (212°F)	**Melting Point:**	Not Established
Solubility (H_2O):	Soluble	**Specific Gravity:**	1.30 @ 4°C (39.2°F), water=1

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions.

Chemical Stability: Conditions to Avoid

Avoid exposure to extreme temperatures, contact with incompatible chemicals, and all contact with combustible materials.

Incompatibility

Flammable and combustible materials, strong reducing agents, finely powdered metals, strong acids.

Hazardous Decomposition

Aluminum compounds and nitrogen oxides.

Hazardous Polymerization

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute and Chronic Toxicity

A: General Product Information

This product is moderately to severely irritating to contaminated tissue.

B: Component Analysis - LD50/LC50

Aluminum nitrate nonahydrate (7784-27-2)

Oral LD50 Rat: 3671 mg/kg

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

In high concentrations, this product may be dangerous to aquatic life and fouling to shorelines.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Environmental Fate

No information available for the product.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes. As packaged this product is a D001 ignitable and DOO2 corrosive waste [40 CFR 261.21]; applicable to wastes consisting only of this product.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Corrosive Liquid, Oxidizing n.o.s. (Aluminum Nitrate)
Hazard Class: 8 (5.1)
UN/NA #: UN 3093
Packing Group: II
Required Label(s): Corrosive, Oxidizer

Canada Transportation of Dangerous Goods Information

Shipping Name: Corrosive Liquid, Oxidizing n.o.s. (Aluminum Nitrate)
Hazard Class: 8 (5.1)
UN/NA #: UN 3093
Packing Group: II
Required Label(s): Corrosive, Oxidizer

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

Aluminum nitrate nonahydrate is a hydrate of an anhydrous form that is on the US TSCA and Canadian DSL inventories and can be referenced under the parent compound name aluminum hydrate (CAS# 013473-90-0).

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Aluminum nitrate nonahydrate (7784-27-2)

SARA 313: 1.0 % de minimis concentration (Chemical Category N511) (related to Water Dissociable Nitrate Compounds)

C: Federal Insecticide, Fungicide, and Rodenticide Act

No information is available.

SARA 311/312: Acute Health Yes **Chronic Health** No **Fire** No **Pressure** No **Reactive** Yes

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Aluminum nitrate nonahydrate (*related to Aluminum, soluble salts)	7784-27-2	Yes*	No	Yes*	No	Yes*	No

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Aluminum nitrate nonahydrate	7784-27-2	1 % (English Item 53, French Item 198) (related to Aluminum, water-soluble salts, n.o.s.)

WHMIS Classification: C, D2B

Additional Regulatory Information

A: General Product Information

No additional information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	NDSL	EINECS	AUST	MITI	PHIL	KOREA	ELINCS	CHINA
Aluminum nitrate nonahydrate	7784-27-2	No	No	No	No	Yes	Yes	Yes	No	No	Yes
Water	7732-18-5	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes

*** Section 16 - Other Information ***

Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists. AICS = Australian Inventory of Chemical Substances. CAS = Chemical Abstract Service. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. CFR = Code of Federal Regulations. CHEMTREC = Chemical Transportation Emergency Center. DSL = Canadian Domestic Substance List. EINECS = European Inventory of New and Existing Chemical Substances. ELINCS = European List of Notified Chemical Substances. EPA = Environmental Protection Agency. FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act; HEPA = High Efficiency Particulate Air. HMIS = Hazardous Material Information System. IARC = International Agency for Research on Cancer. IDLH = Immediately Dangerous to Life and Health. MITI = Japanese Ministry of International Trade and Industry. NDSL = Canadian Non-Domestic Substance List. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NJTSR = New Jersey Trade Secret Registry. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NA = Not available or Not Applicable. SARA = Superfund Amendments and Reauthorization Act. TDG = Transportation of Dangerous Goods. TLV = Threshold Limit Value. TSCA = Toxic Substances Control Act. WHMIS = Workplace Hazardous Materials Information System.

This is the end of MSDS # EES-CT700

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 17-NOV-2004
Supercedes: 17-NOV-2004

FUELSOLV FMG2960

1 Identification of Product and Company

Identification of substance or preparation
FUELSOLV FMG2960

Product Application Area
Fuel treatment

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: 215 355-3300

2 Composition / Information On Ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range(w/w%)
1309-48-4	MAGNESIUM OXIDE Metal fume fever; potential irritant	40-70
NOT ASSIGNED	DIESEL FUEL Combustible liquid	15-40
1332-65-6	COPPER OXYCHLORIDE Irritant (eyes)	15-40

3 Hazards Identification

****

EMERGENCY OVERVIEW

WARNING

May cause moderate irritation to the skin. May cause dermatitis. May cause moderate irritation to the eyes. Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract.

Prolonged exposure may cause dizziness and headache.

DOT hazard: Combustible liquid
Odor: Slight Hydrocarbon; Appearance: Green, Dispersion

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide or foam--Avoid water if possible.

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause moderate irritation to the skin. May cause dermatitis.

ACUTE EYE EFFECTS:
May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:
Primary route of exposure;Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

INGESTION EFFECTS:
May cause abdominal pain, nausea, vomiting, dizziness, lethargy and blurring of vision. Cardiac failure and pulmonary edema may develop. Large doses cause severe kidney damage. May be fatal. Aspiration may cause lung injury or death.

TARGET ORGANS:
Prolonged or repeated exposures may cause CNS depression and/or defatting-type dermatitis. Product or product component may increase the risk of cancer based on limited animal data.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Excessive dermal exposure causes defatting and drying of skin. Excessive inhalation of vapors causes dizziness, headache and nausea.

4 First Aid Measures

SKIN CONTACT:
Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:
Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:
No special instructions

5 Fire Fighting Measures

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
dry chemical, carbon dioxide or foam--Avoid water if possible.
HAZARDOUS DECOMPOSITION PRODUCTS:
elemental oxides
FLASH POINT:
160F 71C P-M(CC)
MISCELLANEOUS:
Combustible liquid
NA 1993;Emergency Response Guide #128

6 Accidental Release Measures

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Remove ignition sources. Flush area with water. Spread sand/grit.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 Handling & Storage

HANDLING:
Combustible. Do not use around sparks or flames. Bond containers during filling or discharge when performed at temperatures at or above the product flash point.
STORAGE:
Keep containers closed when not in use. Store in cool ventilated location. Store away from oxidizers.

8 Exposure Controls / Personal Protection

EXPOSURE LIMITS
CHEMICAL NAME

MAGNESIUM OXIDE
PEL (OSHA): 10 MG/M3(FUME)
TLV (ACGIH): 10 MG/M3(FUME)

DIESEL FUEL
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

COPPER OXYCHLORIDE
PEL (OSHA): 1 MG/M3(AS Cu)
TLV (ACGIH): 0.05 MG/M3(AS Cu)-A4

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with organic vapor cartridges and dust/mist prefilters.

SKIN PROTECTION:
neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles

9 Physical & Chemical Properties

Specific Grav.(70F,21C)	1.772	Vapor Pressure (mmHG)	< 1.0
Freeze Point (F)	< 15	Vapor Density (air=1)	> 1.00
Freeze Point (C)	< -9		
Viscosity(cps 70F,21C)	3000	% Solubility (water)	< 0.0

Odor		Slight Hydrocarbon
Appearance		Green
Physical State		Dispersion
Flash Point	P-M(CC)	160F 71C
pH 5% Extract (approx.)		10.4
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		30.0

NA = not applicable ND = not determined

10 Stability & Reactivity

STABILITY:
Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:
Will not occur.

INCOMPATIBILITIES:
May react with strong oxidizers.

DECOMPOSITION PRODUCTS:
elemental oxides

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11 Toxicological Information

Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

12 Ecological Information

AQUATIC TOXICOLOGY
No Data Available.

BIODEGRADATION
No Data Available.

13 Disposal Considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport Information

DOT HAZARD:	Combustible liquid
PROPER SHIPPING NAME:	COMBUSTIBLE LIQUIDS, N.O.S.(PETROLEUM OIL)
	NA 1993, PG III

DOT EMERGENCY RESPONSE GUIDE #: 128
Note: Some containers may be DOT exempt, please check BOL for exact container classification

15 Regulatory Information

TSCA:
All components of this product are listed in the TSCA inventory.
CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
Treat as oil spill
SARA SECTION 312 HAZARD CLASS:
Immediate(acute);Delayed(Chronic);Fire
SARA SECTION 302 CHEMICALS:
No regulated constituent present at OSHA thresholds
SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
1332-65-6	COPPER OXYCHLORIDE	16.0-20.0%

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):
No regulated constituents present

MICHIGAN REGULATORY INFORMATION

CAS#	CHEMICAL NAME
1332-65-6	COPPER OXYCHLORIDE

16 Other Information

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	2	Moderate Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard

(1) Protective Equipment B Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	04-MAY-1998		** NEW **
	17-NOV-2004	2	04-MAY-1998

APPENDIX C
COAL QUALITY SPECIFICATION SHEET

ALLIANCE COAL, LLC

Data time period 12/31/2005 thru 3/31/2008
Customer:

Tunnel Ridge - Core Holes / /

Proximate Analysis

	As Received Basis	Dry Basis
	Average	
Total Moisture (%)	7.25	
Sulfur (%)	3.15	3.40
Volatile Matter (%)	36.74	39.61
Ash (%)	8.00	8.63
Fixed Carbon (%)	49.31	53.16
BTU/lb	12600	13,585
lbs SO2 / MMbtu (20000)	5.00	5.00
lb / MMbtu Ash	6.35	6.35
SO2 Adj based on	20,000	

Ultimate Analysis

	As Received Basis	Dry Basis
	Average	Average
Carbon (%)	69.54	74.98
Hydrogen (%)	4.84	5.22
Nitrogen (%)	1.30	1.40
Oxygen (%) Diff	7.63	8.22
Chlorine (%)	0.10	0.11

Other Analysis

	As Received
	Average
Grindability Index	62
Equilibrium Moisture %	-
FSI	5.70

Forms Of Sulfur

	Average	Dry Basis Average
Pyritic (%)	1.39	1.49
Sulfate (%)	0.01	0.01
Organic (%)	1.37	1.48

Water Soluble Alk.

	Average	Average
Sodium Oxide (%)	0.006	-
Potassium Oxide (%)	0.001	-

Ash Chemistry Analysis

	Average	
Aluminum Oxide Al2O3 (%)	20.48	
Barium Oxide BaO (%)	-	
Calcium Oxide CaO (%)	1.28	
Ferric Oxide Fe2O3 (%)	31.63	
Magnesium Oxide MgO (%)	0.57	
Manganese Oxide MnO (%)	-	
Phorphorus Pentoxide P205 (%)	0.15	
Potassium Oxide K2O (%)	1.68	
Silica Dioxide SiO2 (%)	42.70	
Sodium Oxide Na20 (%)	0.32	
Stontium Oxide SrO (%)	-	
Sulfur Trioxide SO3 (%)	0.75	
Titanium Dioxide TiO2 (%)	0.61	
Undetermined	0.56	
Base/Acid Ratio	0.59	
T 250	2,284	
Slagging Index	1.81	Medium
Fouling Index	0.18	Low
Silica Value	55.73	

Ash Fusion Analysis

	Average
Reducing Atmosphere	Degrees F
Initial Deformation (IT)	2108
Softening (ST) (H=W)	2201
Hemispherical (HT) (H=1/2W)	2284
Fluid (FT)	2434

Oxidizing Atmosphere	Degrees F
Initial Deformation (IT)	0
Softening (ST) (H=W)	0
Hemispherical (HT) (H=1/2W)	0
Fluid (FT)	0

Trace Element Analysis

	As Determined (ppm) Average
Antimony (Sb)	-
Arsenic (As)	0.64
Barium (Ba)	-
Beryllium (Be)	0.86
Cadmium (Cd)	-
Chromium (Cr)	-
Cobalt (Co)	-
Copper (Cu)	-
Fluoride (F)	46.60
Lead (Pb)	1.73
Lithium (Li)	-
Manganese (Mn)	16.88
Mercury (HG)	0.08
Molybdenum (Mo)	-
Nickel (Ni)	-
Selenium (Se)	0.09
Silver (Ag)	-
Strontium (Sr)	-
Thallium (Tl)	-
Tin (Sn)	-
Vanadium (V)	-
Zinc (Zn)	-
Zirconium (Zr)	-

Complete Analysis compiled by Alliance Coal, LLC as per third party lab results performed as per ASTM

APPENDIX D
SUMMARY OF OPACITY BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATIONS FOR COAL STEAM GENERATORS

APPENDIX D. SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATIONS FOR OPACITY FOR FOSSILE FUEL STEAM GENERATORS

FACILITY NAME	FACILITY STATE	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARYFUEL	THROUGHPUT	THROUGHPUT UNIT	POLLUTANT	TEST METHOD	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVGERAGE TIME CONDITION
COMANCHE STATION	CO	07/05/2005 ACT	PC BOILER - UNIT 3	SUB-BITUMINOUS COAL	7421	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	10	% OPACITY	6 MIN AVG	20	% OPACITY	6 MIN AVG, SHUTDOWN
WALTER SCOTT JR. ENERGY CENTER	IA	06/17/2003 ACT	CBEC 4 BOILER	PRB COAL	7675	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	5	% OPACITY	1 HOUR AVERAGE	5	% OPACITY	
KENTUCKY MOUNTAIN POWER, LLC	KY	05/04/2001 ACT	BOILER, CIRCULATING FLUIDIZED BED UNITS 1 & 2	COAL	2550	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	20	% OPACITY		0		
THOROUGHBRED GENERATING STATION	KY	10/11/2002 ACT	BOILER, COAL, (2)	COAL	7446	MMBTU/H	Visible Emissions (VE)	Unspecified	ESP AND WESP	20	% OPACITY	6-min avg	27	% OPACITY	allowed for one 6 min period/h
EAST KENTUCKY POWER COOP., INC./SPURLOCK POWER STA	KY	08/04/2002 ACT	BOILER, CFB, COAL	COAL	2500	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	20	% OPACITY	6-min avg	27	% OPACITY	allowed for 1 six min period /h
GASCOYNE GENERATING STATION	ND	06/03/2005 ACT	BOILER, COAL-FIRED	LIGNITE	2116	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	10	% OPACITY	6 MIN	0		
SPIRITWOOD STATION	ND	09/14/2007 ACT	ATMOSPHERIC CIRCULATING FLUIDIZED BED BOILER	LIGNITE	1280	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	10	% OPACITY		0		
TOLEDO EDISON CO. - BAYSHORE PLANT	OH	07/31/2003 ACT	BOILER, CFB, COKE/COAL-FIRED	PETROLEUM COKE	1764	MMBTU/H	Visible Emissions (VE)	Unspecified	BAGHOUSE	20	% OPACITY	AS A 6-MINUTE AVERAGE	0		
AMERICAN MUNICIPAL POWER GENERATING STATION	OH	10/08/2009 ACT	BOILER (2), PULVERIZED COAL FIRED	PULVERIZED COAL	5191	MMBTU/H	Visible Emissions (VE)	EPA/OAR Mthd 9	BAGHOUSE	20	% OPACITY	AS A 6-MINUTE AVERAGE	0		
SMART PAPERS HOLDINGS, LLC	OH	01/31/2008 ACT	PULVERIZED DRY BOTTOM BOILER	COAL	420	MMBTU/H	Visible Emissions (VE)	Unspecified		20	% OPACITY	AS A 6-MINUTE AVERAGE, EXCEPT PER RULE	0		
SMART PAPERS HOLDINGS, LLC	OH	01/31/2008 ACT	SPREADER STOKER COAL-FIRED BOILER	COAL	249	MMBTU/H	Visible Emissions (VE)	Unspecified		20	% OPACITY	AS A 6-MINUTE AVERAGE, EXCEPT PER RULE	0		
COGENERATION PLANT (AES-PRCP)	PR	10/29/2001 ACT	2 COAL-FIRED CIRCULATING FLUIDIZED BED BOILERS	BITUMINOUS COAL	454	MW (NET)	Visible Emissions (VE)	Unspecified	ESP, SCRUBBER	20	% OPACITY	6 MIN AV	27	%	1 6 MIN SET/H
WA PARISH ELECTRIC GENERATING STATION	TX	10/15/2003 ACT	(2) BOILERS, UNITS S & 6, WAP5&6, COAL	COAL	7400	MMBTU/H	Visible Emissions (VE)	Unspecified	NONE INDICATED	10	% OPACITY	6 MIN AV, EACH UNIT	0		
WA PARISH ELECTRIC GENERATING STATION	TX	10/15/2003 ACT	(2) BOILERS, UNITS S & 6, COAL & GAS, WAP5&6	COAL	7400	MMBTU/H	Visible Emissions (VE)	Unspecified	NONE INDICATED	10	% OPACITY	6 MIN AV, EACH UNIT	0		
WA PARISH ELECTRIC GENERATING STATION	TX	10/15/2003 ACT	BOILER UNIT 7, COAL, WAP7	COAL	6700	MMBTU/H	Visible Emissions (VE)	Unspecified	NONE INDICATED	10	% OPACITY	6 MIN AV	0		
WA PARISH ELECTRIC GENERATING STATION	TX	10/15/2003 ACT	BOILER UNIT 7, COAL & GAS, WAP7	COAL	6700	MMBTU/H	Visible Emissions (VE)	Unspecified	NONE INDICATED	10	% OPACITY	6 MIN AV	0		
LIMESTONE ELECTRIC GENERATING STATION	TX	05/23/2001 ACT	(2) BOILER UNIT 1 & 2 SCRUBBER STACKS, LMS1 & 2	LIGNITE	7863	MMBTU/H, EA	Visible Emissions (VE)	Unspecified	NONE INDICATED	15	% OPACITY	6 MIN AV, EACH	0		
WASHINGTON PARISH ELECTRIC GENERATING STATION	TX	10/15/2002 ACT	(2) BOILER STACKS, WAP 5 & 6 , COAL ONLY	COAL	6750	MMBTU/H	Visible Emissions (VE)	Unspecified	NONE INDICATED	10	% OPACITY	6 MIN AV	0		
WASHINGTON PARISH ELECTRIC GENERATING STATION	TX	10/15/2002 ACT	BOILER STACK, WAP 7, COAL ONLY	COAL	6700	MMBTU/H	Visible Emissions (VE)	Unspecified	NONE INDICATED	10	% OPACITY	6 MIN AV, EACH	0		
MAIDSVILLE	WV	03/02/2004 ACT	BOILER, PC	PULVERIZED COAL	6114	MMBTU/H	Visible Emissions (VE)	Unspecified	DRY SOLID INJECTION W/ FABRIC FILTER AND WET SCRUBBER	10	% OPACITY		10	% OPACITY	

PART II
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
APPLICATION FOR AIR PERMIT

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

RECEIVED
JAN 03 2011
BUREAU OF AIR REGULATION

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **FLORIDA POWER CORPORATION DBA PROGRESS ENERGY, INC.**	
2. Site Name: **CRYSTAL RIVER POWER PLANT**	
3. Facility Identification Number: **0170004**	
4. Facility Location... Street Address or Other Locator: **NORTH OF CRYSTAL RIVER, WEST OF U.S. 19** City: **CRYSTAL RIVER** County: **CITRUS** Zip Code: **34428**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **JOHN J (JAMIE) HUNTER, LEAD ENVIRONMENTAL SPECIALIST**
2. Application Contact Mailing Address... Organization/Firm: **PROGRESS ENERGY FLORIDA** Street Address: **299 FIRST AVENUE, NORTH, PEF 903** City: **ST. PETERSBURG** State: **FL** Zip Code: **33701**
3. Application Contact Telephone Numbers... Telephone: **(727) 820-5764** ext. Fax:
4. Application Contact E-mail Address: **John.Hunter@PGNmail.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 1/03/11	3. PSD Number (if applicable):
2. Project Number(s): 0170004-[illegible]	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

APPLICATION INFORMATION

Application Comment

Florida Power Corporation, doing business as Progress Energy Florida, Inc. (PEF), has prepared this application for a minor source air construction permit for the Crystal River Energy Complex (CREC) to request temporary installation, testing, and operation of new equipment and processes at the CREC Units 4 and 5, as well as allow for revisions to certain existing permit conditions. The requested permit would allow for temporary operation of an alternative sorbent (e.g., hydrated lime) injection system for sulfuric acid mist (SAM) control, application of fuel additives (e.g., magnesium oxide) for enhanced boiler operation, and revisions to certain permit conditions in Air Construction Permit No. 0170004-023-AC. Specifically, PEF requests revisions to Condition 8.e (the stack opacity limit of 15 percent), as well as removal of, or a change in the terms (from percent sulfur to lbs SO2/MMBTU) of the coal sulfur limit in Condition 6.a.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
004	Unit 4 Fossil Fuel Steam Generator	AC1F	NA
003	Unit 5 Fossil Fuel Steam Generator	AC1F	NA

Application Processing Fee

Check one: ☐ Attached - Amount:_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   LARRY HATCHER, PLANT MANAGER
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **PROGRESS ENERGY FLORIDA**
   Street Address: **299 FIRST AVENUE, NORTH, CN77**
   City: **ST PETERSBURG** State: **FLORIDA** Zip Code: **33701**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 563-4484** ext. Fax: **(352) 563-4496**
4. Owner/Authorized Representative E-mail Address: **LARRY.HATCHER@PGNMAIL.COM**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

   Larry E. Hatch — Signature

   12/29/10 — Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

- ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
- ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
- ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
- ☐ The designated representative at an Acid Rain source or CAIR source.

3. Application Responsible Official Mailing Address...
Organization/Firm:
Street Address:
City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
Telephone: ext. Fax:

5. Application Responsible Official E-mail Address:

APPLICATION INFORMATION

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

Signature _____ Date _____

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Scott H. Osbourn**
   Registration Number: **57557**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.***
   Street Address: **5100 West Lemon St., Suite 208**
   City: **Tampa** State: **FL** Zip Code: **33609**
3. Professional Engineer Telephone Numbers...
   Telephone: **(813) 287-1717** ext. **53304** Fax: **(813) 287-1716**
4. Professional Engineer E-mail Address: **sosbourn@golder.com**
5. Professional Engineer Statement:

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

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

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

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

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

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

Signature Date 12/29/10

(seal)

SCOTT OSBOURN LICENSE NO. 57557 STATE OF FLORIDA PROFESSIONAL ENGINEER

*** Board of Professional Engineers Certificate of Authorization # 00001670**

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **334.3** North (km) **3204.5**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **28/57/34** Longitude (DD/MM/SS) **82/42/01**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **49**	6. Facility SIC(s): **4911**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **JOHN J (JAMIE) HUNTER, LEAD ENVIRONMENTAL SPECIALIST**
2. Facility Contact Mailing Address... Organization/Firm: **PROGRESS ENERGY FLORIDA** Street Address: **299 FIRST AVENUE, NORTH, PEF 903** City: **ST PETERSBURG** State: **FLORIDA** Zip Code: **33701**
3. Facility Contact Telephone Numbers: Telephone: **(727) 820-5764** ext. Fax:
4. Facility Contact E-mail Address: **John.Hunter@PGNmail.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official E-mail Address:

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☒ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM/PM_{10}	A	N
CO	A	N
VOC	A	N
SO_2	A	N
NO_x	A	N
SAM	A	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1.	Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date: **May 20, 2009**
2.	Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date: **May 20, 2009**
3.	Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date: **May 20, 2009**

Additional Requirements for Air Construction Permit Applications

1.	Area Map Showing Facility Location: ☐ Attached, Document ID:_____ ☒ Not Applicable (existing permitted facility)
2.	Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): ☒ Attached, Document ID: See Report
3.	Rule Applicability Analysis: ☒ Attached, Document ID: See Report
4.	List of Exempt Emissions Units: ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)
5.	Fugitive Emissions Identification: ☒ Attached, Document ID: See Report ☐ Not Applicable
6.	Air Quality Analysis (Rule 62-212.400(7), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
7.	Source Impact Analysis (Rule 62-212.400(5), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
8.	Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
9.	Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
10.	Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications -- NA

1. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☐ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications-- NA

1. List of Insignificant Activities: (Required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
   ☐ Attached, Document ID:_____
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
   ☐ Attached, Document ID:_____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities Onsite but Not Required to be Individually Listed
   ☐ Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:_____ ☐ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

   Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):
   ☐ Attached, Document ID: ☒ Previously Submitted, Date: **May 20, 2009**
   ☐ Not Applicable (not an Acid Rain source)

   Phase II NO_X Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):
   ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **May 20, 2009**
   ☐ Not Applicable

   New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☐ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):
   ☐ Attached, Document ID: ☒ Previously Submitted, Date: **May 20, 2009**
   ☐ Not Applicable (not a CAIR source)

Additional Requirements Comment

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership; resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

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