

Golder Associates Inc.

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September 18, 2000

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SEP 19 2000

Florida Department of Environmental Protection
Title V Section; Bureau of Air Regulation (BAR)
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

BUREAU OF AIR REGULATION

Attention: Mr. C.H. Fancy, P.E.

RE: Northside Generating Station/St. Johns River Power Park (SJRPP)
Title V Permit # 0310045-002-AV
SJRPP Conditions of Certification PA 81-13
St. Johns River Power Park PSD-FL-010D
Application of Dust Suppressant - Disclosure

Dear Clair:

St. Johns River Power Park has notified the Department of the use of coal sprayed with a latex binder. As discussed with Mr. Jonathan Holtom of BAR, the Department would like a certification from a professional engineer regarding the use of the latex material as fugitive dust control and provide additional information on several areas. The additional information requested included the potential for VOC emissions from the latex covering, the combustion products, and the potential of other environmental affects of the coal with latex.

The latex material, as provided in the MSDS sheet (Latex DL 298NA), is proprietary polymer (40 to 62 percent) and water (38 to 60 percent). The polymer is characterized as proprietary carboxylated styrene/butadiene polymer. This latex material, when applied as a coating is very similar to styrene-butadiene rubber (SBR). SBR is the most widely used type of synthetic rubber polymer and is used in a wide variety of products including coatings. The material is very similar to latex paints, which are emulsions of SBR, polyvinyl acetate and acrylic resins. Latex DL 298 NA, however, does not contain any pigments, and the polymer is primarily made up of carbon and hydrogen. The term "carboxylated" refers to carbonyl ($=C=O$) and a hydroxyl group ($-OH$) bonded to a carbon atom. When used with coal, the latex serves as an ideal binder, since SBR has unique properties of deformation (elongation or yield under stress). As such, the latex acts to minimize emissions of fugitive dust during transfer and handling. The application of the latex mixture is uniform throughout the coal making up 0.2 percent. Thus, the characteristics of minimizing fugitive dust are throughout the coal and not just on the surface. This will minimize fugitive dust during all handling operations.

When applied, there would be a negligible amount of VOCs emitted, since the polymer is suspended in a water emulsion and will be applied offsite. Even if applied on-site, the VOC emissions would be negligible given that the latex formula is applied in a very dilute form (9 parts water to 1 part latex).

The coal with the small amount of latex would not change the emission characteristics of the SJRPP units. This is based on the contents of the latex, the small amount of latex with the coal and the uniform distribution of the latex material. The latex polymer consists primarily of carbon and hydrogen, since SBR has a formula of $C_{12}H_{14}$ with minor amounts of oxygen. The amount of latex is low at 0.1 percent solids in the coal and is uniformly distributed throughout the coal. The coal is pulverized, further mixing the small amounts of latex. Combustion temperatures in excess of 2,000 degrees F would completely break down the latex to carbon dioxide and water.

In the letter to the Department from Mr. Jay Worley, an MSDS sheet was included for another dust suppressant product referred to as "Dust Ban 7823 Liquid" manufactured by Nalco Chemical. This was included as an example of the dust suppressants available on the market that are made primarily of a polymer material. This material is currently used to minimize fugitive dust at a coal-fired power plant in Virginia, for which I conducted some consulting services. It should be noted that the latex to be used for the SJRPP coal does not contain any alcohol or light distillate compounds.

The use of the latex material as a means to control fugitive dusts at SJRPP is authorized by Specific Condition III. E.3. of the Final Title V permit and is referenced in Subsection E of the Final Title V Permit for the coal storage yard and transfer system. Rule 62-296.320(4)(c)3.c. F.A.C. allows the use of "chemical or other dust suppressants to ... open stock piles and similar activities". The PSD approval (PSD-FL-010D) also allows the use of chemical agents for particulate control. Review of EPA documents clearly indicates that latex is an available control technology for fugitive dust control.

After application, the latex material would not cause any surface runoff issues as the polymer is insoluble and is bound to the coal. Even if sprayed at the plant site, there would be no runoff from the latex. Once dried, the polymer would be insoluble and, as stated above, bound to the coal.

Florida Department of Environmental Protection
Mr. Clair Fancy

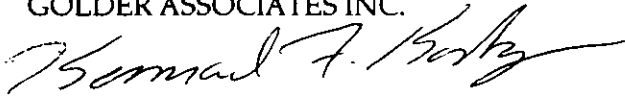
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Please call if you have any further questions. I can be reached at (352) 336-5600 ext. 516.

Sincerely,

GOLDER ASSOCIATES INC.



Kennard F. Kosky, P.E.
Principal
Professional Engineer No. 14996

SEAL



Enclosures

cc: Jay Worley, SJRPP Group Leader
Jonathan Holtom, P.E., FDEP Title V Section
Syed Arif, P.E., FDEP New Source Review
H. Oven, FDEP
S. Pace, RESD AWQD

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