Gray, Jeff

From: Oberg, William Walter
Sent: Thursday, October 05, 2006 10:37 AM
To: Purkey, Ronald E
Cc: Eslinger, Sandra W; Varner, Arthur L; Cahill, Donald Patrick; Kammeyer, John C; Johnson, Randall E; Lewis, Kenneth E II; Gray, Jeff; Thompson, Melissa A; Rehberg, Robert L
Subject: RE: PH control on KIF ash pond
Attachments: Ash Pond Conditioning With Acetic Acid Info R1.doc

Melissa Thompson did a little research on this method of Ash Pond pH control. Her findings are in the attached document. We do feel this method is an innovative approach and the recommendations included in the attached should be performed. We are not against this method, we simply want whats best for TVA.

From: Purkey, Ronald E
Sent: Monday, October 02, 2006 11:01 AM
To: Oberg, William Walter
Cc: Eslinger, Sandra W; Varner, Arthur L; Cahill, Donald Patrick; Kammeyer, John C; Johnson, Randall E; Lewis, Kenneth E II; Gray, Jeff
Subject: PH control on KIF ash pond

Bill

Ash Pond Conditioning With Acetic Acid Information

Revision 1

I. Introduction

Several people from TVA and other utilities provided information regarding injecting acetic acid instead of CO_2 for ash pond conditioning at KIF. This document will outline the gathered information and provide recommendations on pursuing acetic acid for the KIF ash pond conditioning. Table 1 below outlines the various people that have provided information regarding this subject.

Table 1. People providing information regarding acetic acid for ash pond conditioning.

Name	Position	Company
Naresh Handagama	RSO&E Environmental Engineer	TVA
Rome Brenneman	---	BOC
Jerry Helderman	Harding Street Station Engineering Plant Leader	Indianapolis Power & Light
Ed Healy	Consulting Engineer	Southern Company
Will Kaufman	Environmental Specialist	Hoosier Energy
Paul Clements	---	Dominion Generation
Steve Barnes	Permit Program Specialist	TVA
Jim Mathews	Water Chemistry Expert	Duke Energy

One other consideration Steve mentioned is that the glacial acetic acid freezes at around 60 degrees F. Tanks and piping will require heat tracing and there may be a need for a mixing mechanism. The CO_2 injection mechanism uses a bubbling sparger grid for mixing of the gas into the pond.

Rome Brenneman of BOC was contacted for information in the industry regarding acetic acid injection. BOC is a supplier of carbon dioxide and CO_2 injection systems for ash pond conditioning. BOC supplied the ash pond conditioning system for COF. BOC doesn't have any experience with acetic acid, but reported that nicer acids for this kind of treatment tend to cost more money, especially when compared to CO_2 and the efficiency it provides.

III. Other Utility Knowledge & Experience with Acetic Acid

Indianapolis Power & Light uses CO_2 for ash pond pH control. They inject near the outfall and do not treat all of the ponds. They mentioned acetic acid might be corrosive to some of the metal and acetic acid vapors could be damaging to some electronics and motor brushes.

Hoosier Energy has not used acid conditioning for pH adjustments in ash ponds. They had some issues at their small (250[illegible] conditioning [illegible]

1. Perform cost estimate for both CO_2 and acetic acid injection systems installation and operation at KIF to verify true cost savings.
2. Perform lab study (possibly a jar test) to verify the formation of the calcium ethanoate salt and any residual effects that could have on the ash pond ecosystem.