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June 20, 2002

Mr. Sean Furjanic
Pennsylvania Department of Environmental Protection
Water Quality Management
909 Elmerton Avenue
Harrisburg, PA 17110-8200

CCN-1601

Subject: Information Requested for Temporary Discharge Under NPDES Permit PA0009733

Dear Mr. Furjanic;

This letter is in response to your request for additional information about the coagulant proposed for use during the dredging operation at Peach Bottom Atomic Power Station beginning August 2002. Your questions concerned the use of the coagulant and an analysis method for the coagulant or polymer.

The use of the coagulant is based on the information provided by the contractor performing the dredging and dewatering. The coagulant will be approximately a ¼ to ½ % solution stored in a 500 gallon reinforced fiberglass tank. The solution will be fed into the suction side of the filter press feed pumps at approximately 1.5 to 2 pounds per dry ton. If the sludge flow is 100 gpm, this is a feed rate of approximately 3 gallons per minute (gpm) of a ¼ % coagulant solution.

According to Mr. Stan Barto of Ciba Specialty Chemical Co., the manufacturer of the coagulant, there is no analytical method to determine residual concentration for polymers. This is due to the rapid degradation of the polymer and rapid reaction of the polymer with any solids in the receiving stream. The degradation of the polymer is more rapid in more dilute solutions. The effluent flow of approximately 1000 gallons per minute (gpm) will be diluted by the approximately 1.5 million gpm of the Discharge Canal. This dilution and the relatively high solids of the Discharge Canal from the Susquehanna River should create a rapid decrease and elimination of any polymer, which may be in the effluent flow.

An excess of 1 to 2 parts per million of polymer will create a visual affect on the filter press process. The filter cake becomes sticky and will not come off the press correctly, decreasing the efficiency of the process. The process operator will adjust feed rate to decrease the over feed of the polymer. This ensures the polymer is fed at the correct rate for most efficient operation and least concentration in the effluent.

There is a qualitative method for determining if any excess polymer is in the effluent. A sample of the process effluent is mixed with a sample of untreated flow then observed to determine if coagulation occurs. If signs of coagulation are observed then there is some polymer in the effluent. This method could be made semi quantitative by treating samples of untreated flow with

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known amounts of coagulant. If coagulation is observed in the effluent plus untreated sample, it can be compared to these known samples.

This polymer is a physical toxicity due to the polymer coating the gills of the fish and preventing oxygen exchange. If the polymer reacts with solids in the receiving stream it is not available to attach to the fish gills. The Discharge Canal flow is composed of once through cooling water from the Susquehanna River. With the solids levels in the Susquehanna River and consequently the Discharge Canal the polymer should react rapidly.

If you have any further questions on this matter, feel free to contact me at 610-765-5904. Thank you for your cooperation and attention to this matter.

Sincerely,

Tracy J. Siglin

Mr. Tracy J. Siglin
Environmental Affairs

Cc: Ray, A.W.
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