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ILLINOIS POWER COMPANY



CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

October 2, 1985

Docket No. 50-461

Mr. James G. Keppler  
Regional Administrator  
Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: IE Bulletin 81-03:  
Flow Blockage of Cooling Water to  
Safety System Components by Corbicula  
Sp. (Asiatic Clam) and Mytilus Sp.  
(Mussel)

Dear Mr. Keppler:

Illinois Power (IP) Company responded to this bulletin in a letter to you from G. E. Waller on July 14, 1981. Subsequent to that report, Asiatic clams were discovered for the first time in Lake Clinton on August 13, 1985. This letter provides formal notification of their discovery and details the actions taken and planned to ensure that Corbicula will not cause a significant biofouling problem at Clinton Power Station (CPS).

The CPS screenhouse was inspected on August 26, 1985, for Corbicula. This inspection consisted of searching the bottom of the screenhouse using SCUBA. Although no Corbicula were found in this inspection, recently settled larva or small juveniles would not have been detected in this inspection because of their small size (.008 inches). Corbicula larva (veligers) are released and have the potential to enter water systems whenever water temperatures are above 60°F.

The major systems which could be affected by Corbicula are the circulating water, plant service water, shutdown service water, and fire protection systems. Because of the different types of systems affected, the CPS control program is in two parts. Flow-through systems (circulating water and parts of plant service water) could be clogged by large clams which come through traveling screens as larva and mature in the screenhouse. Static standby systems (fire protection and shutdown service water) could be additionally threatened by larva entering the piping and maturing there.

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To protect flow-through systems, CPS will implement CPS Procedure 2400.01 "CPS Corbicula Control" which outlines a method of periodically killing the clams that have accumulated in the screenhouse. This method involves pumping sodium-metabisulfite ( $\text{Na}_2\text{S}_2\text{O}_5$ ) and other chemicals to the bottom of the screenhouse which creates an anaerobic condition that asphyxiates the clams. This process will be done during plant outages in each section of the screenhouse separately. Vital components will always have water available.

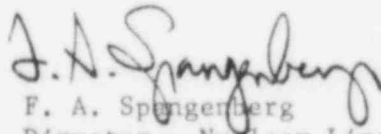
Stagnant systems will be protected by chlorination. When an incident occurs requiring operation of the fire protection or shutdown service water pumps, unchlorinated water which could contain Corbicula larva will enter the system. Therefore, after such an event, CPS Procedure 2400.01 will require flushing all affected portions of the system with chlorinated plant service water. CPS Procedure 2400.01 will be revised to include detailed implementation instructions prior to fuel load.

James A. Smithson, Supervisor of Field Biology for IP, presented a paper to the 43rd Annual Meeting of the American Power Conference, April 27-29, 1981, entitled "Control and Treatment of Asiatic Clams in Power Plant Intakes". It reported having killed over 90% of the clams with the anaerobic method. It also states chlorine at 0.5 ppm for 72 hours will result in 100% mortality of larva.

Illinois Power is confident that a combination of periodic oxygen depletion in the screen house to kill the adults plus screens and chlorine to kill the larva in static systems, will ensure Corbicula will not cause a significant biofouling problem at CPS.

I hereby affirm that the information in this letter is correct to the best of my knowledge.

Sincerely yours,



F. A. Spangenberg  
Director - Nuclear Licensing  
Nuclear Station Engineering

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cc: B. L. Siegel, NRC Clinton Licensing Project Manager  
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