

ILLINOIS POWER COMPANY



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500 SOUTH 27TH STREET, DECATUR, ILLINOIS 62525

July 14, 1981

Mr. James G. Keppler
Director, Region III
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137



Dear Mr. Keppler:

Clinton Power Station Units 1 & 2
Docket Nos. 50-461 and 50-462
Construction Permits No. CPPR-137 & CPPR-138

This is in reply to IE Bulletin No. 81-03, "Flow Blockage of Cooling Water to Safety System Components by Corbicula Sp. (Asiatic Clam) and Mytilus Sp. (Mussel)".

Lake Clinton has been sampled quarterly since May 1974 and no evidence of the Corbicula species (Asiatic Clams) has ever been found. Central Labs have extensive firsthand experience in controlling Asiatic Clams at some of IP's coal-fired plants, and we plan to use their proven control techniques should the clams appear at the Clinton Power Station (CPS). If Asiatic Clams were present at CPS, the major systems affected would be circulating water, plant service water, shutdown service water, and fire protection.

Since the summer of 1978, Central Labs have conducted the quarterly benthos sampling in six locations in and below Lake Clinton. This program is outlined in chapter 6, "Effluent and Environmental Measurements and Monitoring" of the Clinton Power Station Environmental Report - Operating License Stage (ER-OLS). The most recent sample was taken in May 1981 and revealed no evidence of Asiatic Clams. After work is completed in the pump suction area of the screen house and it is filled with lake water, monitoring will begin inside the screen house. This will be the most likely location to find the clams since it will be free from their natural predators.

Because of the different types of systems affected, the CPS control program (if Asiatic Clams are found at Lake Clinton) will be in two parts. Flow-through systems (circulating water and parts of plant service water) would be clogged by large clams which come through the traveling screens as larva (veligers) and mature in the screen house. Static standby systems (fire protection and shutdown

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service water) would be additionally threatened by veligers entering the piping and maturing there.

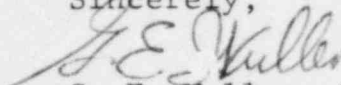
James A. Smithson, Supervisor of Field Biology for IP, presented a paper to the 43rd Annual Meeting of the American Power Conference, April 27-29, 1981 entitled "Control and Treatment of Asiatic Clams in Power Plant Intakes". It outlines a method of periodically killing the clams that have accumulated in the screen house before they grow large enough to cause blockage. This method involves pumping sodium-metabisulfite ($\text{Na}_2\text{S}_2\text{O}_5$) to the bottom of the screen house which creates an anerobic condition that asphyxiates the clams. Since the process requires the pumps shutdown for approximately three days, this would be done in each section of the screen house separately. Vital components would always have water available. Treatment would be performed often enough so the shell sizes would remain small enough to prevent condenser tubes in free-flowing systems from plugging.

The greater threat of small clams getting into the stagnant systems will be handled by using chlorination. Both back-up systems are normally supplied by plant service water which already has an automatic chlorination system and 1/16" screens. No additional chlorination system will be needed. When an incident occurs requiring operation of the fire protection or shutdown service water pumps, unchlorinated water would enter the systems. Therefore, after such an event, operating procedures will require flushing all normally stagnant systems with chlorinated plant service water. In normal testing of the pumps, the flow will be bypassed and not enter the main header.

Smithson's paper reported having killed over 90% of the clams with the anaerobic method when the water temperature is above 75°F and hydrogen sulfide (H_2S) is also used. It also states chlorine at .5 ppm for 72 hours will result in 100% mortality of veligers. Although the plant service water system's chlorine concentration may be less than that, it is felt the lower concentration will be effective since the water will remain stagnant longer than 72 hours.

Through it's environmental monitoring program, CPS feels it will be adequately warned of the existence of Corbicula before their presence affects plant safety. Should they be detected, a combination of periodic oxygen depletion in the screen house to kill the adults plus screens and chlorine to kill the veligers in static systems, should keep fouling to a minimum.

Sincerely,



G. E. Wuller, Supervisor
Licensing
Nuclear Station Engineering

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cc: Mr. H. H. Livermore, NRC Resident Inspector
Director, Office of I & E, NRC, Washington, D. C.