

DUKE POWER COMPANY

P.O. BOX 33189  
CHARLOTTE, N.C. 28242

HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

TELEPHONE  
(704) 373-4531

February 11, 1983

Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Attention: Mr. Andy Cunningham

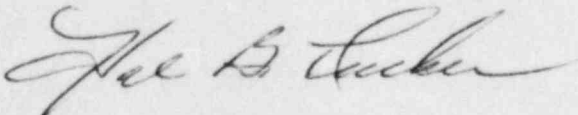
Re: RII:ELJ  
McGuire Nuclear Station  
Docket Nos. 50-369 and 50-370  
IE Bulletin 81-03 (Additional Information)

Dear Mr. O'Reilly:

Please find attached Duke Power Company's response to IE Bulletin 81-03. This bulletin concerns flow blockage of cooling water to safety components by Corbicula sp. (Asiatic Clams) and Mytilus sp. (Mussel). This is being submitted as additional information as requested by Mr. Edward L. Jordan, NPC/OIE, in his letter dated December 14, 1982.

I declare under penalty of perjury that the statements set forth herein are true and correct to the best of my knowledge.

Very truly yours,



Hal B. Tucker

WHM/php  
Attachment

cc: Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Mr. W. T. Orders  
Senior Resident Inspector  
McGuire Nuclear Station

83 FEB 23 4 49

8303010650 830211  
PDR ADOCK 05000369  
Q PDR

IE31

Duke Power Company  
McGuire Nuclear Station

Response to IE Bulletin 81-03 (Additional Information)

- 2.) McGuire Nuclear Station has confirmed the absence of clams and shell debris in the Nuclear Service Water System (RN) and the Fire Protection System (RF) by visual inspections during routine maintenance activities and high velocity flushes. As described in Section 3, a representative sample of components in the RN system will be monitored on a regular basis to assure proper operation. Results of the high velocity flush tests on the RF system are also provided in Section 3. These activities will assure that no system degradation is occurring due to clams. Station personnel are aware of the intrusion potential of clams and continue to visually inspect for clams during normal maintenance activities. Neither the RN or RF systems have ever been fouled by clams or shell debris.
- 3.) McGuire Nuclear Station will monitor two heat exchangers in the RN system on a quarterly basis. This monitoring will consist of setting a reproducible flow and recording the inlet and outlet pressures. The differential pressure will be compared over time to determine if fouling is occurring. The heat exchangers to be monitored are Containment Spray Heat Exchanger 1A (18" piping) and the Air Handling Unit for Residual Heat Removal Pump Motor 1A (2" piping). This performance test is to be implemented by April 1, 1983, assuming that flow instrumentation will be calibrated by this time. If significant fouling is detected on these heat exchangers, other heat exchangers in the RN system will be inspected.

A high velocity flush of the RF system is performed annually to detect any flow blockage which may occur. The initial high velocity flush showed evidence of clams in the system. Subsequent high velocity flushes have shown a reduction of clams in the system. No clams were detected during the most recent high velocity flush conducted in October 1982.

- 4a.) The potential for intrusion of clams into the RN and RF systems during low water level conditions in Lake Norman is no greater than during normal water level conditions. A sufficient volume of water is provided during low water level conditions to preclude a significant increase in the velocity of inlet water to the pump suctions.

Under worst case conditions, the standby nuclear service water pond is maintained at full level (as required by the Technical Specifications) and is available for use. Therefore, high velocities for this source are not a problem.

- 4b.) Although no clams are present in the RN system at this time, the performance test as stated in Section 3 will be implemented to determine any system degradation caused by clams. Station personnel will also continue to monitor this system for evidence of clams during normal maintenance activities. A high velocity flush of the RF system is performed annually to detect any flow blockage which may be occurring.

In order to prevent clams from entering the RN system, the intake pumps are filtered with a 3/16 inch mesh strainer. If necessary the RN system design allows for high velocity flush and backflushing also. To prevent clams from entering the RF system, the system is flushed with chlorinated water. Chlorine is fed into the Jockey Pumps to maintain a residual concentration of 1-3 ppm chlorine. The chlorine level is monitored weekly to verify this concentration. Also, duplex strainers are located on the suction of the Jockey Pumps to prevent adult clams from entering the system.

- 5b.) The following safety related components in the RN system are potentially affected by Corbicula:

Component Cooling System (KC) Heat Exchanger  
Containment Spray System (NS) Heat Exchanger  
Nuclear Service Water System (RN) Pump Motor Heat Exchanger  
Component Cooling System (KC) Pump Motor Heat Exchanger  
Auxiliary Feedwater System (CA) Pump Motor Heat Exchanger  
Safety Injection System (NI) Pump Motor Heat Exchanger  
Chemical & Volume Control System (NV) Pump Motor Heat Exchanger  
Safety Injection System (NI) Pump Oil Heat Exchanger  
Chemical & Volume Control System (NV) Pump Oil Heat Exchanger  
Control Area Ventilation System (VC) Chiller Heat Exchanger  
Diesel Generator Engine Cooling Water System (KD) Heat Exchanger  
Air handling units for the Residual Heat Removal Pump Motors (ND),  
Containment Spray Pump Motors (NS), and Spent Fuel Cooling Pump Motors (KF)

The RF system has no components such as heat exchangers that could be affected by clams.

- 5c.) Although there has been evidence of clams in the RN and RF systems in the past, no fouling has been observed.
- 5d.) Corbicula sp. (clams) were first discovered at McGuire Nuclear Station during preoperational testing of the RF system in August of 1978. Although there has been evidence of clams in the RN and RF systems in the past, no fouling has been observed.
- 5e.) Because McGuire Nuclear Station has never experienced any flow blockage due to clams, no corrective actions have been deemed necessary. Preventive actions taken to eliminate clams in the RN and RF systems are described in Section 4b.